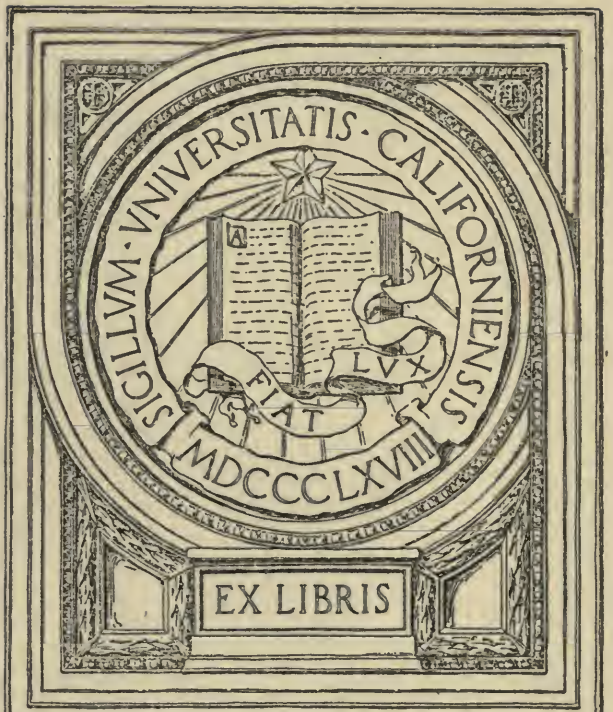
THE WOODWORKER SERIES

WOOD CARVING



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WOODCARVING

(THE WOODWORKER SERIES)

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231 ILLUSTRATIONS

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CONTENTS

		PAGE
I.	CARVING GOTHIC FORMS . . .	1
II.	BORDERS (GOTHIC).	10
III.	CARVING THE GOTHIC TREFOIL . .	19
IV.	HOW TO CARVE THE ACANTHUS LEAF	27
V.	ANOTHER FORM OF LEAF . . .	35
VI.	A CARVED FRAME	43
VII.	THE DECORATION OF PICTURE AND MIRROR FRAMES	49
VIII.	CARVING A HERALDIC SHIELD . .	55
IX.	APPLICATION OF CARVING TO FURNITURE (1) Elizabethan Oak Chest . . .	63
X.	APPLICATION OF CARVING TO FURNITURE (2) Ornament for a Pediment . . .	70
XI.	APPLICATION OF CARVING TO FURNITURE (3) Design for a Cabinet Door . . .	76
XII.	APPLICATION OF CARVING TO FURNITURE (4) Gothic Tracery	82
XIII.	APPLICATION OF CARVING TO FURNITURE (5) The Carved Cabriole Leg . . .	88

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Contents

		PAGE
XIV.	CONVENTIONAL LION AND GALLIC COCK (APPLIED TO SPANDRELS) .	95
XV.	NATURAL FORMS: CARVING A BIRD AND FOLIAGE PANEL . . .	101
XVI.	NATURAL FORMS: CARVING A FISH PANEL	107
XVII.	NATURAL FORMS: CARVING A HARE AND SQUIRREL PANEL . . .	114
XVIII.	THE CARVING OF AMORINO HEADS ON BRACKETS	120
XIX.	CARVING GROTESQUE HEADS AND MASKS	125
XX.	CARVING GROTESQUES: THE GRIFFIN	130
XXI.	FIGURE CARVING: PANELLED FIGURES	136
XXII.	A CARVED MILITARY PANEL. . .	142
XXIII.	CARVING HEADS FROM SHADED DRAWINGS	147
XXIV.	CARVING ON EARLY VICTORIAN FURNITURE	154
XXV.	FESTOONS OR SWAGS	165
XXVI.	CARVED CONSOLES FOR DOOR CANOPY	171
XXVII.	WOODCARVING TOOLS	177
XXVIII.	SHARPENING TOOLS	185
XXIX.	DESIGNS	191
XXX.	WOODS FOR CARVING	201
	INDEX	211

FOREWORD

A GLANCE at the contents of this Volume will indicate that its aim is to be of practical help to the practical man. By 'practical' is not meant merely the student of woodcarving, but rather the woodworker who wishes to combine art-carving with constructional work. A panel or other carved form is nothing in itself. It only becomes something real when it is a part of some larger woodwork structure —that is, an ornamental feature of some piece of constructional woodwork or of a useful article of furniture.

The following chapters have, for the most part, been written by an experienced woodcarver who, for many years, has had the opportunity of training others in the craft. He does not regard woodcarving as an end in itself, but as a means of artistic woodwork decoration. He assumes his reader to be the practical man who, in turning to woodcarving, has a definite object in view—the object of combining an art craft with everyday woodwork. The student can produce panels of various forms which may be admired as such, but it is the carver-cabinetmaker who builds and ornaments his own furniture.

In the Volume will be found five chapters dealing

specifically with the application of carving to furniture. In the subsequent chapters, however, the blending of art-handwork and construction is kept in view, and the treatment of natural forms, of grotesques and figure subjects, has all a direct bearing on the general aim.

The illustrations, of which there are a large number, have been specially drawn to elucidate the text, and —with a few exceptions—are the work of the author. Several suggestive designs, not specially referred to in the text, have been added. The comprehensive Index will be found useful for reference to details.

J. C. S. Brough.

I.—GOTHIC FORMS

EVERY PRACTICAL HANDBOOK has necessarily a chapter dealing with tools and materials, and as a rule this chapter is placed first. In the present case, however, the writer is taking the liberty to depart from a time-honoured rule. The chapter on tools is included, but it appears later. The truth is that no beginner at woodcarving requires a complete outfit. For what he can at first accomplish only a few well chosen tools are necessary. To bring him at the outset face to face with a formidable list of various chisels, gouges, fluters, veiners, bent background and parting tools is but to bewilder him. These, later on, he can face fearlessly as the uses of the different tools become familiar to him; but, to begin with, what will interest him more is to understand what can be done with a range of from six to a dozen tools.

GOTHIC FORMS.—As an introduction to woodcarving, no better examples or exercises can be given than those of the work of the Gothic period. Here we find abundant proof of clean and crisp cutting, full of life and activity, combined with a true appreciation of nature. At the same time the limitations of the material and the tools employed are frankly acknowledged. Therefore, if we approach the subject in the spirit of the men of old we cannot but succeed. There is of course no necessity to stay where they have stayed, but we may take advantage of such knowledge as is handed down to us. Their tools were few, and so should it be with a beginner.

It is wonderful what an amazing variety of shapes and forms can be cut with half a dozen carving tools. Fig. 1 represents a block of wood 4½ in. square and

¾ in. thick, of pine, walnut, oak, or any close-grained freely cutting wood available. This is the surface upon which we are going to execute our first lesson.

Upon the block of wood trace the outline of the Gothic leaf shown. Assume that the wood is held

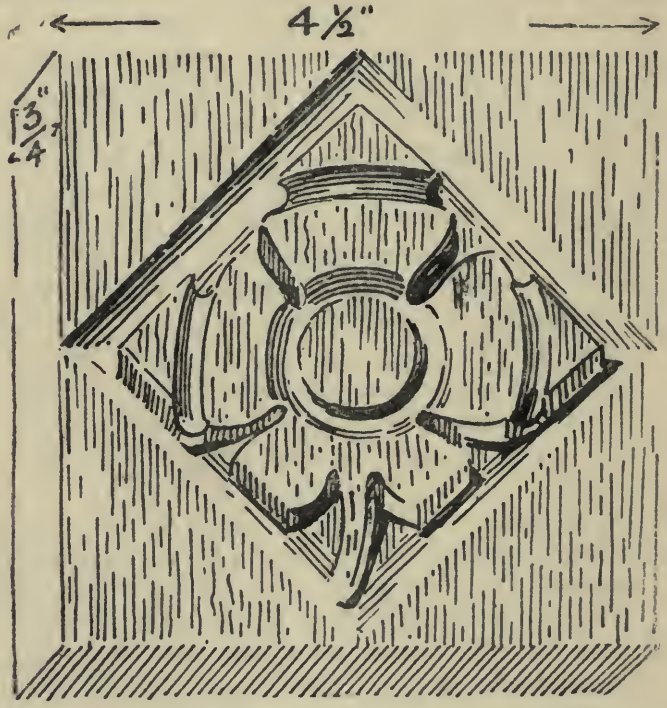


FIG. 1.—GOTHIC LEAF FORM; FIRST STAGE OF CARVING

firmly to a table, carving board, or bench, by means of a cramp, Fig. 4. (The cramp shown is better than the ordinary form so often used, which is weak at the angles, and soon gets out of order. In Fig. 5 the imprint of the tools to be used is given. Any further illustration is unnecessary, as all tools by first-class manufacturers are alike in form, the only necessity

being that it should be understood whether bent or straight tools are ordered. In this set forms D and E should be bent. A Washita oilstone, a Washita slip, and an Arkansas slip are required. The oilstone is for sharpening chisels and the outside of gouges, the Washita slip for the inside of gouges, and the Arkansas slip for V tools and veiners. A piece of leather should

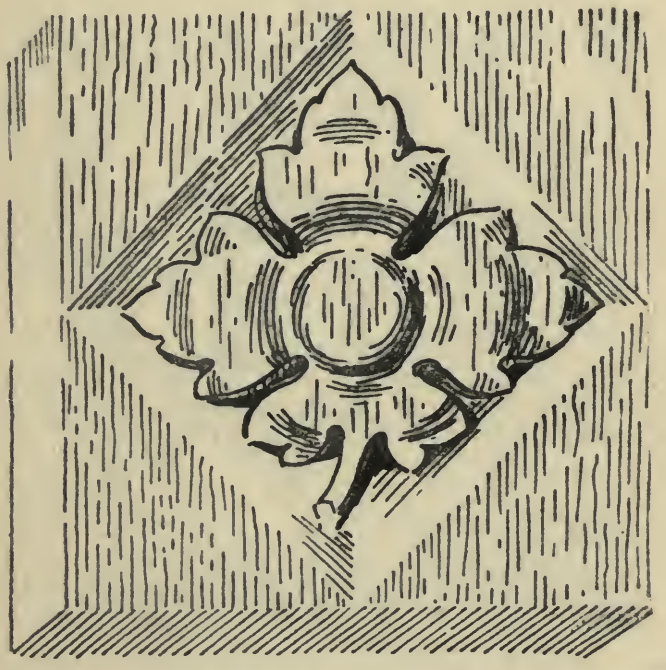


FIG. 2.—GOTHIC LEAF FORM; SECOND STAGE OF CARVING

also be provided for the purpose of stropping. Short lengths of old leather belting make excellent strops for carving tools.

FIRST STAGE IN CARVING.—Assuming now that we have marked out the diagrams and that tools and accessories are ready to hand and in the condition to make good and clean cuts, take the chisel (A, Fig. 5)

and set in the outline, taking care in forcing down that the blade slants slightly outwards towards the outside of the block. This is to allow of a little wood being left for the purpose of trueing up afterwards. The wood is now cut away in a slanting direction from the outside edge towards the centre. (See section, Fig. 6.) It is preferable to cut this away by means of the flat

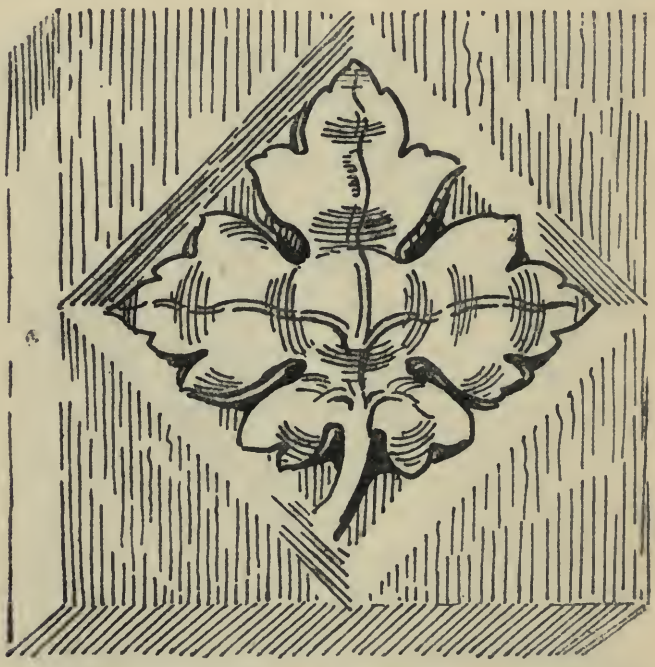


FIG. 3.—GOTHIC LEAF FORM; FINAL STAGE OF CARVING

gouge, and also to sink the pattern by means of the deeper gouge instead of setting in with the chisel. This, however, requires more practice and care, the reason being that a chisel is apt to force the wood and cause cracks. Nearly all the oldest and best work is modelled and sunk by means of the gouge alone.

Having sunk this diamond-shaped outline to a depth of at least ½ in., take the gouge (D) and cut

out the inner circular ring, leaving the centre raised. In doing this, work from right to left, or vice versa, according to the grain of the wood. Proceed in the same manner with the outer circle, using the smaller gouge (E). When finished, form lobes by means of sunk channels or cuts, as in Fig. 1. These should be deep—that is, carried down to a depth approaching

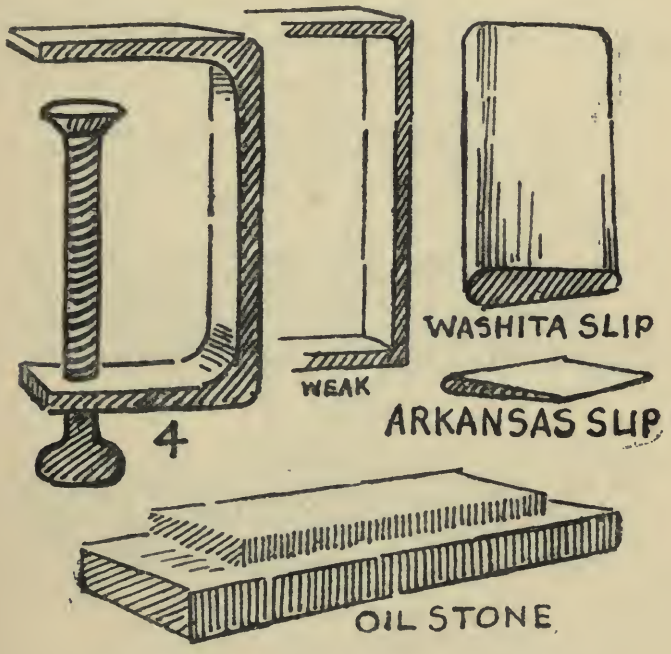


FIG. 4.—CRAMP, OILSTONE, AND SLIPS

$\frac{1}{2}$ in. Now, by means of the gouge, we cut away the wood on the outside edges of the lobes, thereby dividing the main lobes into groups of three or more smaller ones on one main lobe. The general appearance of the wood block should now assume the form as in Fig. 1.

SECOND STAGE.—Take the flat gouge or chisel, and

cut or round off all the rectangular edges of the circular grooves (the surface will take the form of that shown in section Fig 6, G and H), care being taken to do this with as few cuts as possible, and to abstain from giving the rounded edges too smooth an appearance. The marks of the tool and the facets made by them

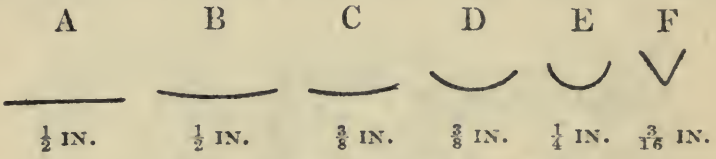


FIG. 5.—SET OF SIX CARVING TOOLS.
A, CHISEL; B AND C, FLAT GOUGES;
D AND E, BENT GOUGES; F, V-TOOL

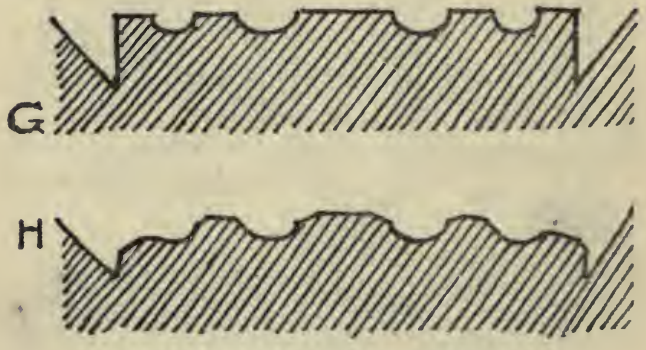


FIG. 6.—SECTIONS OF CARVING

are one of the charms and characteristics of woodcarving. The general modelling on the ends of the lobes, etc., is then finished by means of the smaller shallow gouge (C).

After the junction of the leaf stalks with the leaf has been carved the example could very well be left without any further work being done upon it.

THIRD STAGE.—If it is wished to carry this leaf exercise still further, leading veins should be cut in.

(Fig. 3.) This is done by means of the V tool (F), a groove being cut on either side of the intended vein, leaving a raised part in the centre for the surface of the vein which is then slightly rounded. The valleys or grooves caused by the V tool should be rounded or splayed off on to the general surface of the leaf. If, in spite of all care taken, an accident should occur

FIG. 7.—THE MAPLE LEAF

to one or more of the lobes, do not be discouraged, but take advantage of the latitude afforded by examples in nature and cut or model these parts on a lower plane. Should it be desired to remove the surplus wood which surrounds the leaf, this can be done in the usual way with the chisel, but to the carver the marks left by the flat gouge are more pleasing.

When these leaf forms are used in a design for

carving, and parts of the ground exposed, it is not necessary in this style to rout or clean them out to a level surface. A broken ground, providing it is cleanly cut and not woolly, has an advantage of its own, adds richness to the pattern, and does not have such a laboured appearance. The use of the punch should

FIG. 8.—BOOK RACK END, WITH CARVED ORNAMENT BASED ON MAPLE LEAF

be avoided, as it is in many cases only an excuse, or at least a veil, to hide untidy work.

This lesson, being an example of method only, a type of leaf has been chosen (in this case the maple, Fig. 7) which lends itself to variations in form. The upper part can be elongated, and other alterations made if the main characteristics are retained.

The finished leaf as described is not a mere exercise,

but may be used in many ways, such as a patera or as the centre for some small panel.

DESIGN FOR FRAME WITH GOTHIC ORNAMENT

To show how the same leaf form may be adapted in other ways, a sketch design for a book rack end is given at Fig. 8. The leaf is the same as that dealt with, and the design suggested might be used for other purposes.

II.—GOTHIC FORMS: BORDERS

WITH woodcarving, as with other crafts, method plays such an important part that, before starting on a fresh piece of work, time spent in thinking out the general scheme and the setting-out is well spent. Beginners are apt to be in too much of a hurry to get on to the finishing stages, but if the earlier parts are rushed the final stage cannot be so successful as would otherwise be the case.

At Fig. 9 is shown the design for a carved frame or border, which may be flat in section or moulded as indicated. Fig. 10 indicates how the pattern is set out on the wood, the dotted lines guiding the eye in the sweep of the curves. Fig. 12 shows the enlarged detail, and this illustration (with Fig. 13) forms the exercise of which the present chapter treats.

BORDER DESIGN (FIG. 9).—For the sake of those who have had little or no instruction in setting out their drawings, the outline illustration, Fig. 10, has been introduced. It should be borne in mind that illustrations in magazines and books are neeessarily small, so that the ability to set out with ease to a larger seale from small illustrations is very important. Always try to work to as large a scale as the article in hand will allow.

The exercise, Fig. 12, should be drawn by means of the carbon or transfer paper upon a pieee of pine about 12 in. long, 5 in. or 6 in. wide, and $\frac{3}{4}$ in. thiek. This will allow a fair margin of wood at the sides to work against, and also for the cramp to hold on to without doing damage.

The former exercise (Fig. 1) consisted of more or

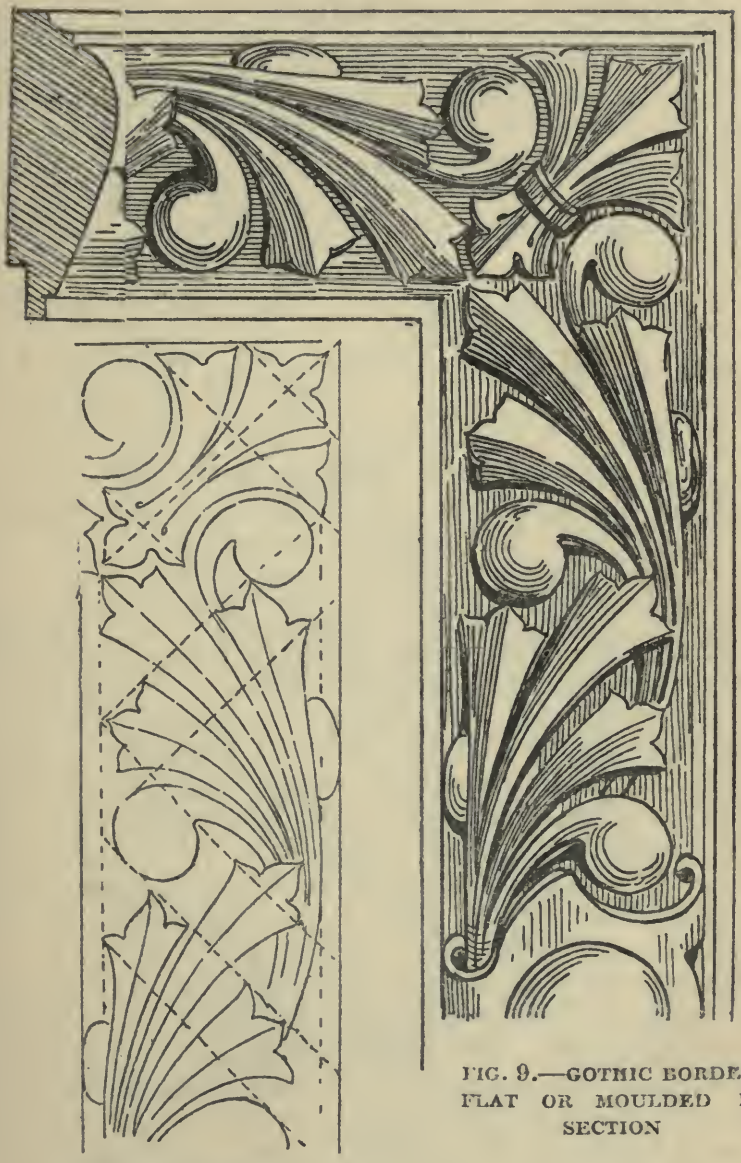


FIG. 9.—GOTHIC BORDER, FLAT OR MOULDED IN SECTION

FIG. 10.—METHOD OF SETTING OUT FIG. 9

less circular cuts or sweeps of the gouge, but in Fig. 12 we have longer and more subtle curves. Presuming that the main lines, as in the upper unit, are drawn, take the V tool (F, Fig. 11) and cut along the curved leading lines, starting with a light and shallow cut. and gradually cutting deeper and more boldly as the outside edges are approached. In the upper part

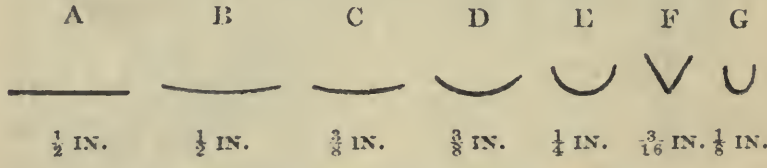


FIG. 11.—SET OF SEVEN CARVING TOOLS

A, Chisel; B and C, Flat Gouges; D and E, Bent Gouges; F, V-Tool; G, Veiner.

(Fig. 12) we have thus a cut or cuts which, starting from the left hand, sweep out and finish towards the right. In the lower half the positions are reversed, but the work should be done (if the grain of the wood will allow of it) while the wood is fixed in the same position. Thus two very useful exercises of wrist play are given, one to the right, the other to the left. The deeper of these V cuts should be at least ⅜ in. deep, and at the finish of this first part the upper part of the block should present the appearance of the upper unit of Fig. 12.

Now take the gouges, B and C (Fig. 11) and set in the curved and rounded lobes shown by dotted lines. Cut away the wood by means of the V tool used a little on its side, or, if found somewhat difficult to use, the chisel (A) will do. It must be understood that this lesson will not be satisfactory unless both units are worked. The carving tools (of whatever pattern) are held with the right hand grasping the handle, the left also holding the tool but lower down

FIG. 12.—ENLARGED DETAIL OF BORDER DESIGN (FIG. 10)

and partly on the metal, thereby acting as a brake or check upon the cuts. This should always be done, otherwise accidents will occur and perhaps be serious. There should always be a feeling of resistance of left hand against the right; it is by this means that the cut is graded and stopped.

Take the shallow gouges (B and C) again, and, holding them guarded as suggested, cut the surface of the flat lobes on either side of the central dotted line so that a ridge with slightly concave sides is left. (See section, Fig. 12, lower unit.) This should bring the outside edges of lobes to within about 1-16 in. of what will be the ground. The upper ends of the lobes are set in with the same gouges, according to the contour of the diagram. The rounded lobes are also worked over with tools B and C.

All the cutting should be made in as long and clean a sweep as possible, and this should be practised until it is accomplished with a fair amount of ease. All the surplus background can now be cut away, and the whole gradually cleaned up. The V tool, which is used to do a great deal of the work in the above example, is rather a difficult one to handle and use, and is still more difficult for the beginner to sharpen when blunt or broken. But it is an essential tool, and if beginners learn to guard against slipping, and practise upon a spare piece of wood, they should not take long to master it.

SECOND BORDER DESIGN.—Fig. 13 (the detail shown enlarged in Fig. 15) is an exercise of a different type, although the idea of alternating repeat is the same. A small gouge of $\frac{1}{8}$ in., generally called a veiner should be added to our list for this example (G, Fig. 11). Tracing the leading lines on the wood as before, we start this lesson by cutting all round the outline with the $\frac{1}{4}$ in. gouge (E, Fig. 11), working out the wood to as near the depth of $\frac{3}{8}$ in. as possible. Work carefully, and if the grain should work up reverse the cut,

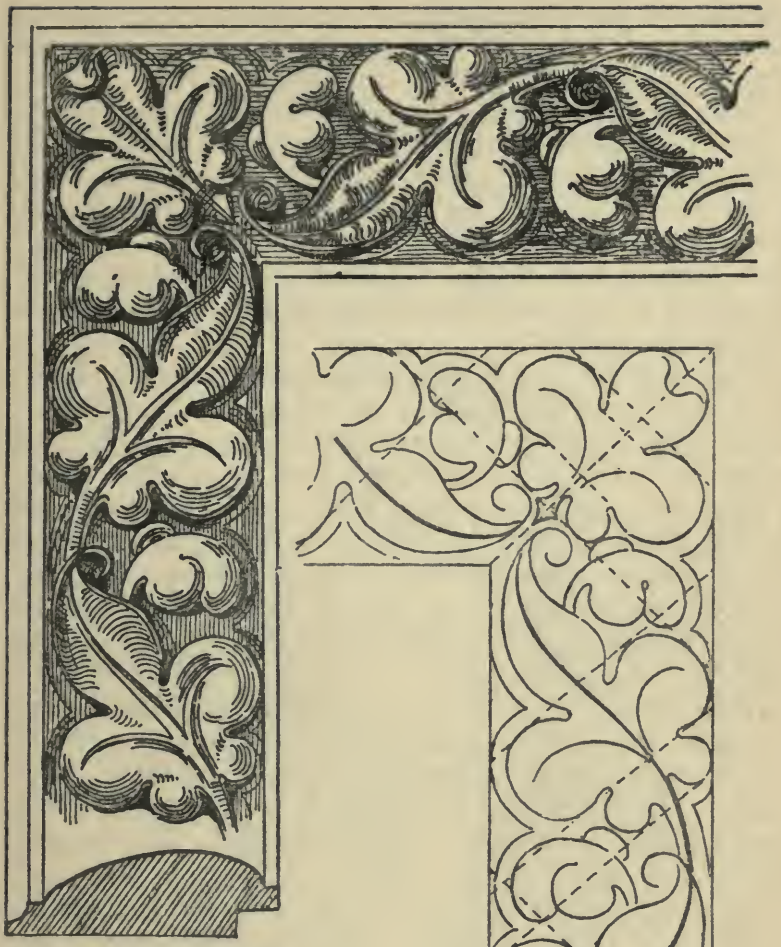


FIG. 13.—DESIGN FOR CARVED BORDER

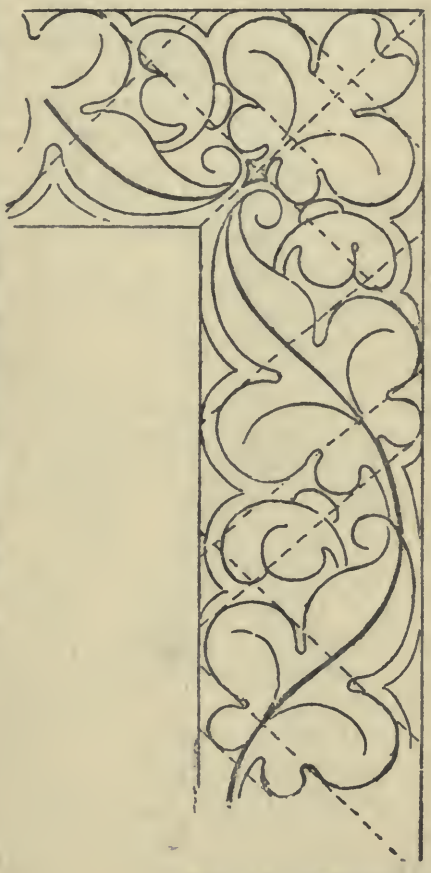


FIG. 14.—METHOD OF SETTING OUT SAME

taking care that the tools are sharp and that the left hand is resisting the right as before. Try and get the hollows very clean and neat.

Now take the $\frac{1}{8}$ in. gouge, or veiner, cut from the lower part of the leaf next to the stalk, and on either side, two grooves which shall leave a raised part between for veins. (See sections, Fig. 15.) If these two tools are used carefully the work should now have the appearance of the upper unit of Fig. 15. The rounded forms are then finished off by means of the flat gouges.

The section lines showing the contour of the surface should be carefully studied before the final modelling is done, and advantage should be taken of these sectional lines to learn to read light and shade for carving purposes. Attention may also be called to the placing of the lines. They are placed at right angles to the main sweep or flow of the pattern. As in the former design the surplus wood can be cut away from the sides, but if the channels are clean it would perhaps look best left as it is.

Patterns of this type are suitable for the carved borders of picture frames, and once the unit is understood and mastered it becomes an easy design to repeat. The two patterns given might readily be adapted on many articles of light furniture which the reader is likely to make.

In all woodcarving it should be remembered that wood is a great absorber of light; therefore it is better to cut on the deep side than otherwise, a good contrast of light and dark being very helpful to a rich effect.

A well known law in ornament is that decoration or carving placed upon a moulding should suggest the contour of the moulding, therefore these two patterns and others based on the same principle are suitable for sections such as those indicated in Figs. 9 and 13.

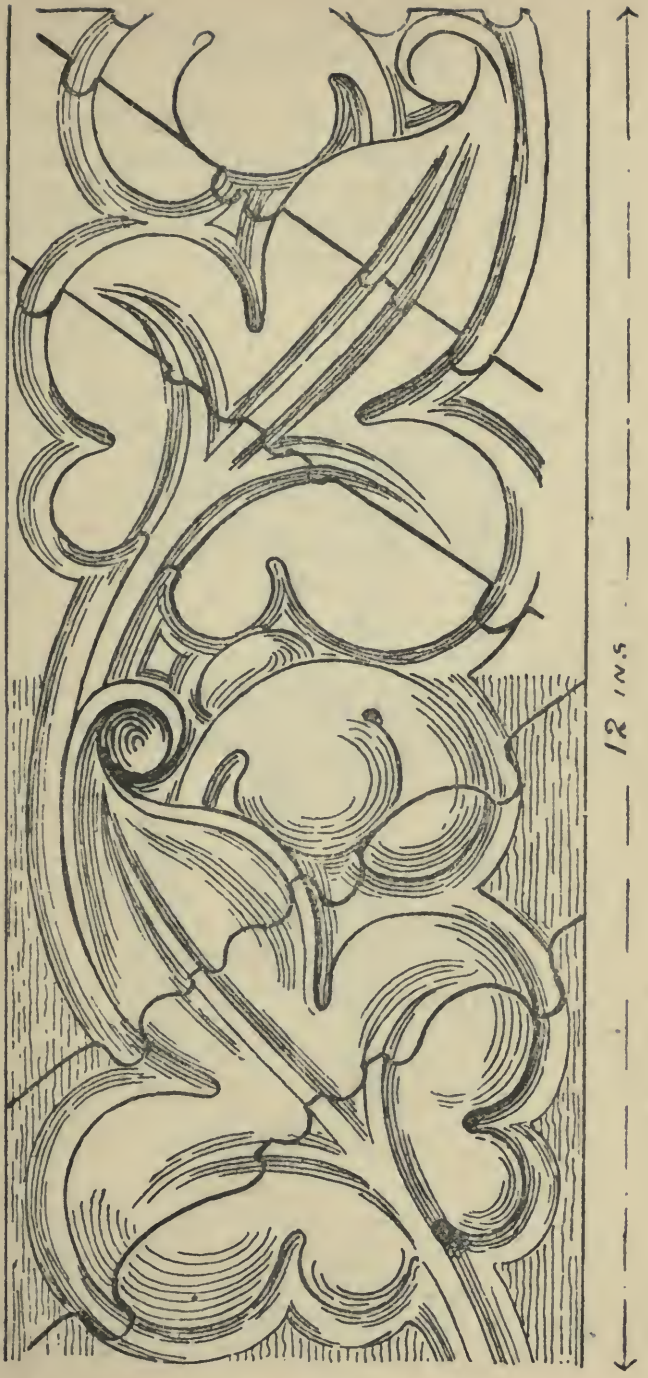
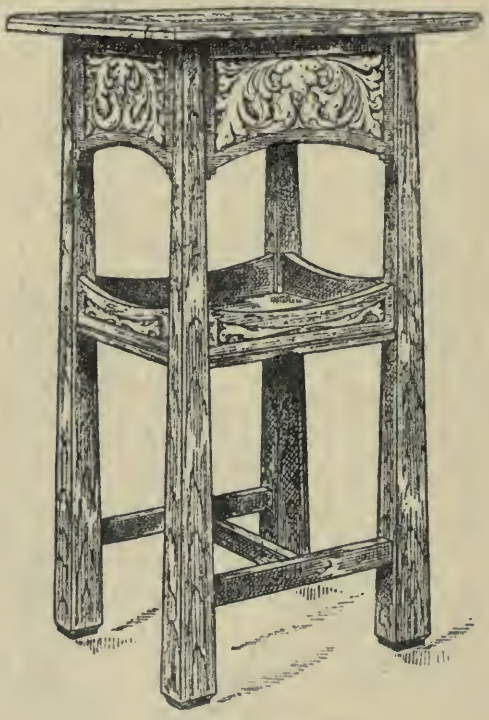


FIG. 15.—ENLARGED DETAIL OF BORDER DESIGN (FIG. 13)

As an alternative, should any difficulty be found in executing these exercises by means of the V tool and veiner, their outlines can be set in by means of the different gouges, and the modelling afterwards carried out as already suggested.



CARVED TABLE

III.—GOTHIC FORMS: THE TREFOIL

THE subject of this third lesson in woodcarving is the Gothic rendering of the trefoil, used with so much power and good taste during the early English period of architecture. It is not, of course, used here with so much strength and vigour as in our churches, because its uses are different. Were we going to execute a carved cap or capital in the round, it would be another matter; the relief would be greater and more force and go could be given to it. Anyhow, it is desirable to attempt to obtain some of this feeling in lower relief work; therefore we are going to ask that the carver should cut a little deeper than the proportions set out in these illustrations if the wood being used will allow of it. The depth in this style should as a rule be at least $\frac{3}{8}$ in.

In the illustration, Fig. 16, we have a sprig or spray so arranged that we can look upon it as a unit to be used in a variety of ways as it may please the carver. For examples, note Figs. 19, 20, 21, and 22. It will always be found that, if the unit is carefully studied and as carefully cut, its repetition will be an easy matter. However complicated many designs may appear to be at first sight, on looking into them we find the constant repetition of the unit in slightly varying form. Grasp the motive, and half the difficulty is over. Thus, make a tracing or drawing of this spray, then transfer it in alternate positions, side by side, etc., and you will probably be surprised at the number of patterns and designs that can be obtained from it. See the setting out of leading lines in these diagrams and in Fig. 22.

CARVING THE TREFOIL.—To commence the exercise, the tracing having been made, take the parting or

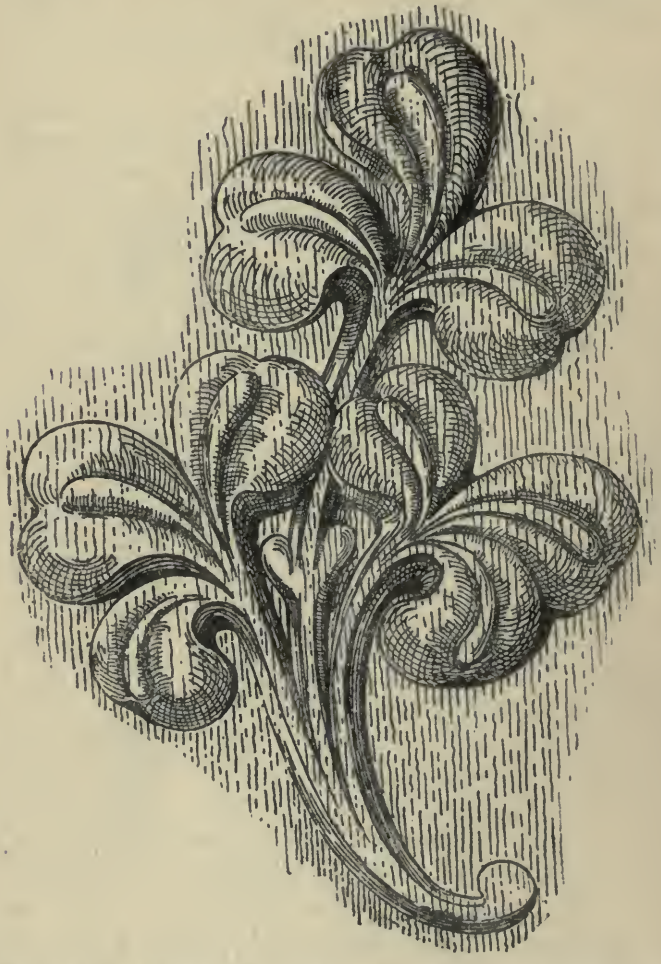


FIG. 16.—EXAMPLE OF TREFOIL SPRAY, TO BE USED AS A UNIT IN DESIGN

V tool (F, Fig. 23) and cut away the ground upon and around the lobes as shown in the working illustration, Fig. 18. See the upper leaf; all the parts should be

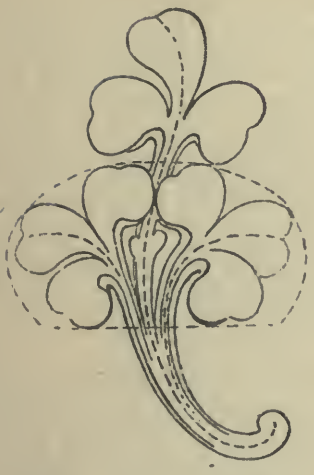


FIG. 17.—OUTLINE FORM OF FIG. 16

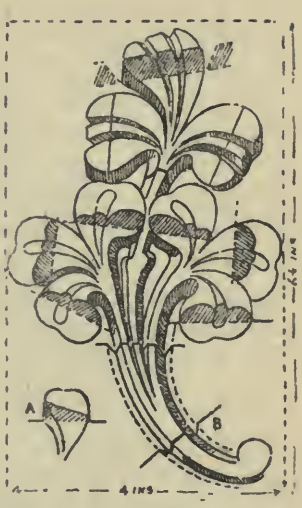


FIG. 18.—SETTING IN OF FIG. 16

FIG. 19.—BORDER ADAPTATION OF THE TREFOIL

FIG. 20.—PEDIMENT ADAPTATION OF THE TREFOIL

treated in this way first. In most woodcarving setting in (or stabbing as it is called) prevents any alteration, even if desirable, owing to the wood being pierced to too great a depth, and so marking the ground. This is therefore another good reason why the V tool or gouges are preferable. If we are carving in hard wood, and the setting-in method is adopted, a mallet is necessary. This should be fairly heavy, and of the usual pattern for carvers. But mallets should be used as little as possible; they are bad for the tools, and the work as well, if over used.

The ground having been cut away in the form of valleys or grooves all round the leaves, round off the lobes and the raised part in the centre of each lobe by means of the gouges B and C (Fig. 23), taking particular care to correctly read the sections marked in the diagram, Fig. 18. These sections are supposed to be cut vertically downwards at right angles to the flow of the leading lines and the lobes. This system is a very useful one, and is known as the rectangular or right angle system, the cutting of section always being at that angle to the flow of line. Care must be taken to keep one side of the lobe or leaf higher than the other, as shown in these sections and in Fig. 16, so as to give a good grip or twist to the stalks and leaves. It is also essential that the cuts should be as long and sweeping as possible, especially in the side cuts of the stalks. To get these nice and clean the tools should be well stropped and kept sharp. Work in a side light, from the left if possible, as the light and shade of your work will then help you. Keep your cutting as in A, Fig. 18, and according to the sections; it will make all the difference between weak and strong work.

When you have got thus far, take the gouge (D, Fig. 23) and hollow in the sides of the leaf stalks a little (see B, Fig. 18); this will give a better effect in light and shade.

FIG. 21.—PANEL DESIGN MADE UP OF THE TREFOIL UNIT (SEE FIG. 16)

For the sake of practice this spray should not be cut smaller than 4 in. by 6½ in., and it would be a good exercise to place two or more in any chosen position, working them as a simple design. An exact copy or repeat is not at all necessary (or at all likely to be obtained) in woodcarving. What should be aimed at is to emphasise the chief characteristics of the leaf in hand, and not to outrage nature in the treatment.

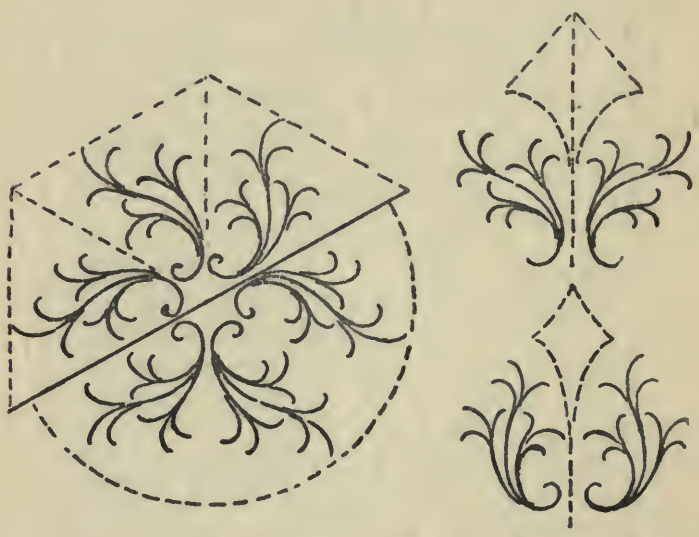


FIG. 22.—OUTLINE SUGGESTIONS FOR ADAPTATION OF THE GOTHIC TREFOIL FORM

ADDITIONAL TOOLS.—Supposing that you wish to carve a panel based upon this example, and that it will be necessary to clear up and cut away the background, three tools, in addition to those shown in Fig. 23, should be obtained, two of them being *bent* chisels (one ⅜ in., the other ¼ in.) and a macaroni tool of 3-16 in. The bent chisels are useful and suitable for cleaning up the ground. They can be used at a very slight angle, owing to the bend, and thus a

shallow cut can be taken where necessary. The macaroni tool is like a bent chisel with vertical sides, something like a small coal shovel or scoop. When well sharpened and in good order it makes a nice clean rectangular cut at the junction of the carving with the ground. (See Fig. 24.)

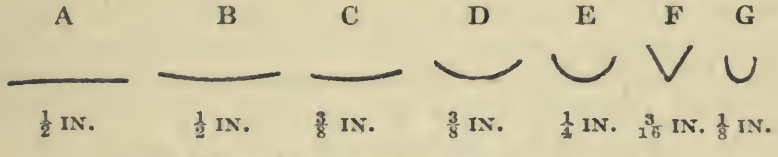


FIG. 23.—SET OF SEVEN CARVING TOOLS

A, Chisel; B and C, Flat Gouges; D and E, Bent Gouges; F, V-Tool; G, Veiner.

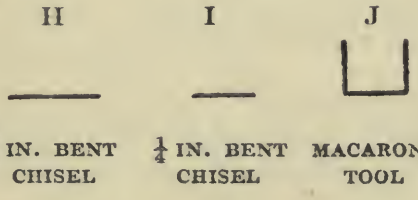
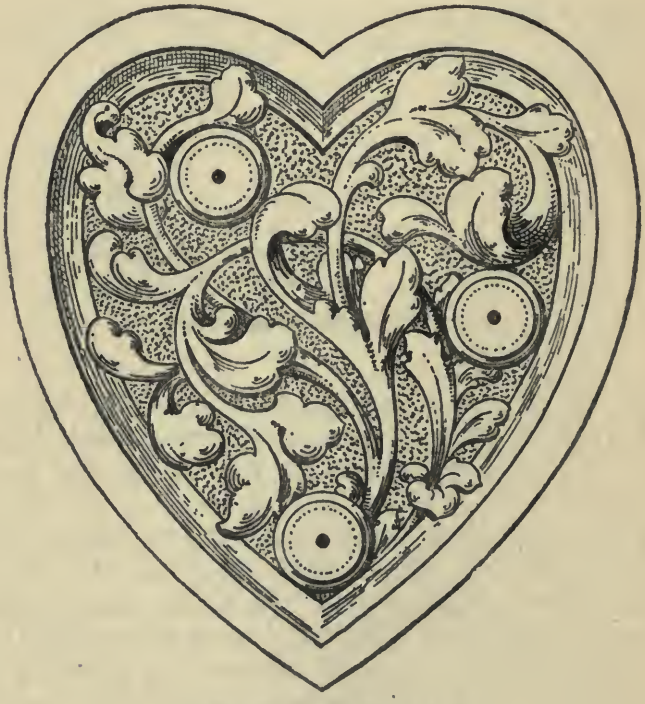


FIG. 24.—THREE NEW TOOLS

THE EXAMPLES illustrated of the application of this unit to fill given forms or shapes are only intended to give a lead and are not for any particular purpose, but it is hoped that interested readers of this book will endeavour to make patterns by arrangement and alteration, as it is this which makes all the difference between mere copying and intelligent work—between man and a machine. Should a part of the lobe be cut off by mistake, or due to an accident, cut it again according to what may be left of it. Some parts may almost sink into the ground, and yet the effect may be good; only thought must be given to the matter and there should be reason in every cut.

In sharpening and using the gouges do not let them become too pointed, that is, the centre projecting beyond the sides. It is enough to take just a little off these sides or corners; to unduly do so causes the centre to cut and mark the wood before the sides are engaged at all. Any of the ordinary woods used in carving will do for these exercises, but the best soft wood for beginners is pine. Of hard woods, walnut and oak are suitable, but American oak, unless picked out by an experienced man, should be avoided, as it is apt to be fibrous.



DESIGN FOR KEY RACK

IV.—HOW TO CARVE THE ACANTHUS LEAF

IN dealing with the acanthus leaf in its simpler form, we may leave for the moment all suggestion of Gothic feeling in the carving and attempt only to retain the boldness of cutting. With this form we enter into a rich field of modelling and ornamentation, known as the Renaissance style. The foliage of this period was all more or less based upon variations of the acanthus, which, although partly derived from a natural leaf, has been so altered to suit certain conditions that it can be best styled as conventional. Some of its different treatments will be given in the course of these articles.

The leaf (Fig. 27) should be cut from a piece of wood 9 in. by 7 in. by 1¼ in., in pine for early practice, in oak or walnut if to be made up afterwards. The pattern should as usual be traced on the wood with carbon paper. Then, the wood being held firmly by means of the cramp, or a bench holdfast, the outline of the pipes and eyes (A and B, Fig. 27) set in. It is not much use putting any detail upon the wood at this stage, as it will probably be cut away. Now take the ⅜ in. gouge (D, Fig. 28), after the upper part of the lobes have been set in, as at Fig. 25, A, and cut across the grain to the setting in of the pipes and eyes ; leave concave spaces as shown. A space should first of all be cleared from around the pipes and eyes by means of the V tool, and the ¼ in. gouge. Details of how to free these forms (the pipes and eyes) from the wood need not be repeated. Working outwards from the main or central stem, the wood should have the appearance of Fig. 25, with a section similar to that

shown. After this set in by means of the flat gouges or the parting tool the whole of the containing lines of the pattern (*not the smaller lobes*), and cut the wood away according to the lie of the grain, making bold

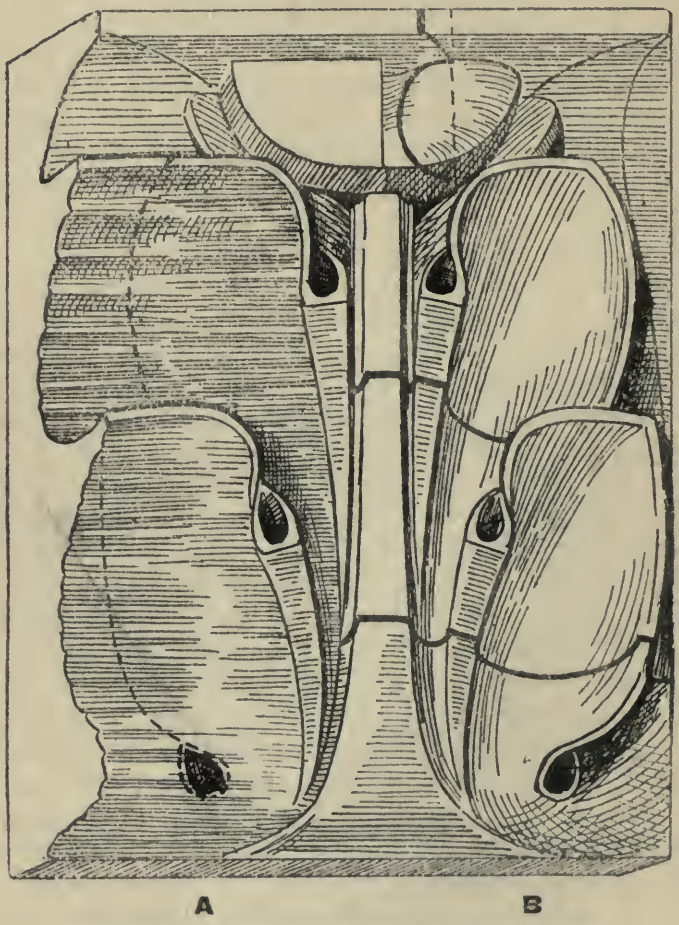


FIG. 25.—ACANTHUS LEAF; FIRST STAGE

clean hollowing cuts with gouges B, C, and D (Fig. 28) according to the contour until it has somewhat the appearance of Fig. 25, B.

The curve and shape of a table spoon (only shallower, see Fig. 29) gives a fair idea of this hollow. It should be noted that, while the spoon shape is symmetrical, the lobes are not, and also that a spoon, as it lies on

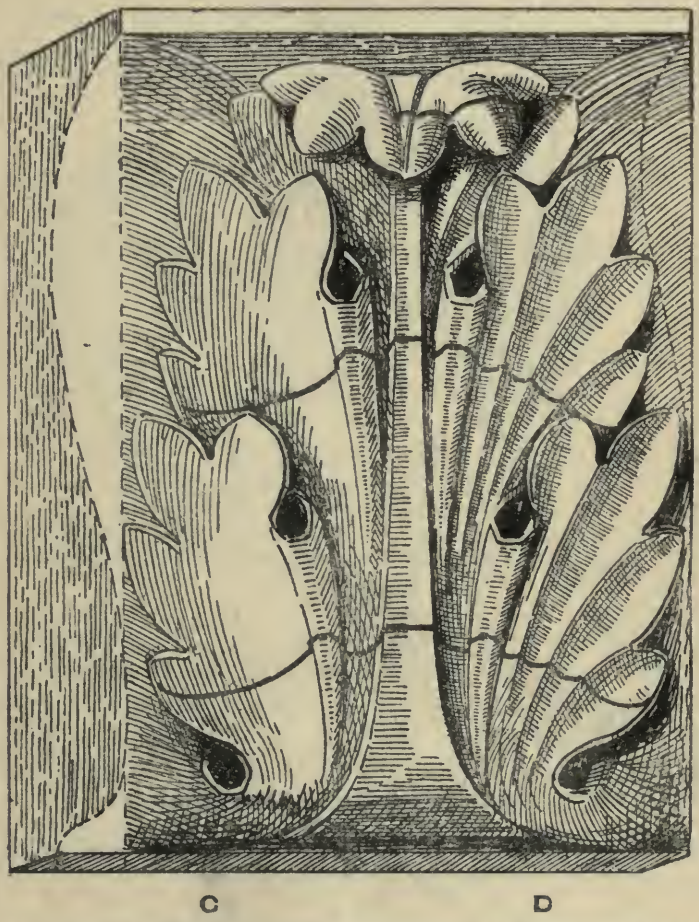


FIG. 26.—SECOND STAGE IN CARVING ACANTHUS LEAF

a surface, is much undercut. In the case of these lobes or main divisions, it is better to have very little (if any) undercutting; if done at all, the undercutting

should be left to the last stage. The section in black line on the half marked Fig. 25B should be a good guide, but all the stages mentioned should be gone through in their proper order so as to get into a good method.

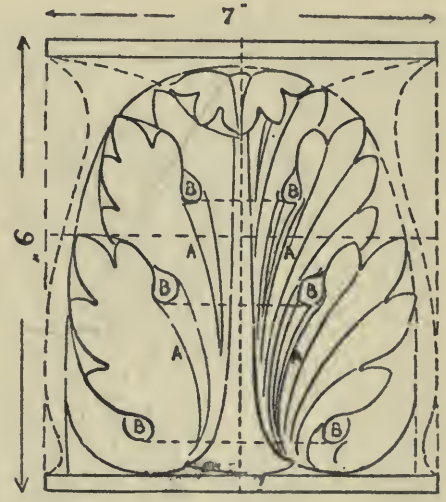


FIG. 27.—PATTERN OF ACANTHUS LEAF FOR SETTING OUT

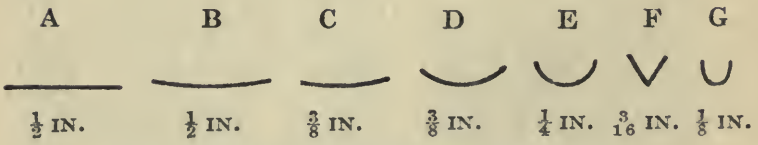


FIG. 28.—SET OF SEVEN CARVING TOOLS

A, Chisel; B and C, Flat Gouges; D and E, Bent Gouges; F, V-Tool; G, Veiner

When the whole of the leaf has been cut so that it appears on both sides of the mid rib to have the appearance of Fig. 25, B, take the gouges B and C, and set in the smaller lobes as in Fig. 26, C. It is assumed that the upper part of the leaf has been

modelled by means of the carving tools so that it has the appearance of Fig. 25, B (see vertical section of the top lobe).

The carving should now be examined to see that the general section or side view is as Fig. 26, C, with the lobes slightly raised. Take the gouges D and E and cut out, by means of as long and clean sweeps of the tool as possible, the smaller hollows of the lesser

FIG. 29.—SPOON FORM

FIG. 29A.—SPOON FORM, CARVED

lobes, bringing the tool to the surface according to the smallness or shallowness of the hollow. Fig. 29 (the spoon form) gives an idea of this stage of the work. These small lobes, in fact, are hollows within a main hollow; the ridges that rise between them are important and should be kept as straight and true as possible along the very subtle curves they form. It is better to work from the inside outwards to the border, gradually increasing the depth and width of the hollows until the tool is raised to finish the top of lobe.

ADAPTATION OF THE ACANTHUS.—In the sketch of a flower-pot stand or holder (Fig. 30) the left face is shown with the mid rib nearly straight. At the right

side it is modelled on a curve; either way would do according to the wishes of the carver, but both ways must not be used upon the same article as in our sketch, which is given merely to show the two effects. In

FIG. 30.—FLOWER-POT STAND, SHOWING STRAIGHT AND CURVED TREATMENTS OF ACANTHUS LEAF

no carving do long clean sweeps tell with such effect as in the acanthus leaf hollows. They should be shell-like and hold a very valuable grading of light and shade which is the chief value of this style. It is difficult

without a multiplication of drawings to give a true description of the contours, but in that matter the carver must think for himself as he goes along, and also take advantage of the opportunity of examining good examples, of which there are many. These,

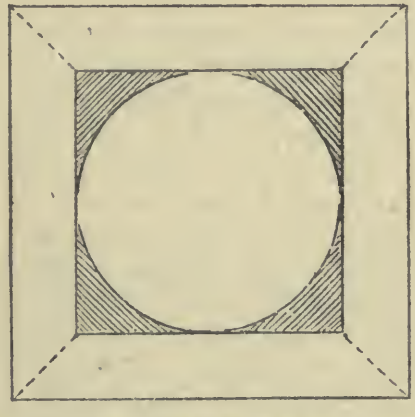


FIG. 31.—BASE OF FLOWER-POT STAND

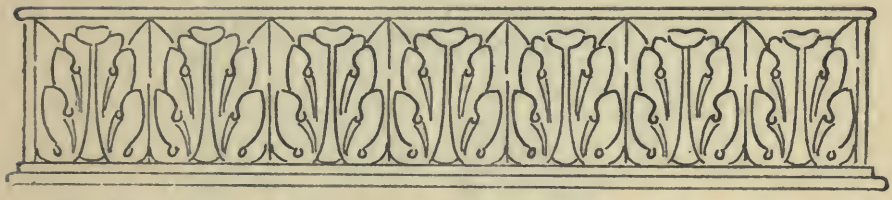


FIG. 32.—OUTLINE SUGGESTION FOR WINDOW BOX WITH CARVED ACANTHUS LEAF

although often rich and complicated, are in the first place set out on a very simple plan and section. Leaves, etc., of the conventional acanthus type are so largely used in architectural and other work that it is well worth giving the matter very careful study.

In the matter of learning to carve properly it is much better for beginners to keep their work on the

simple side and obtain broad effects than to attempt elaboration in the way of detail. To take this leaf as an example, it would be satisfactory if the carving was left in the state of main lobes only as in Fig. 25, B. This would be suitable for a carved pattern for a window box, a simple vertical treatment of a border, and for many other purposes.

If the illustrated flower-pot holder were carried out it should be lined with zinc and have arrangements to hold the water draining from the plant. This would be an easy matter with but a slight knowledge of woodwork. The mitres should be well joined and tongued together, and a good bottom of at least ¾ in. stuff added. For window boxes separate slabs can be carved and then fastened into a framework.

It is of great importance that sufficient care should be taken to keep on the outside of all setting-out lines in this example, as any slight difference in the proportion and symmetry of the lobes would be noticeable. This must always be so in symmetrically arranged objects ; therefore allow in full and have a little wood to true up afterwards. The eyes of pipes should be sunk in to a fair depth, appearing as dark spots.

V.—ANOTHER FORM OF LEAF

THE details, Figs. 33 and 34, are units to be carved on a somewhat similar plan to the former exercises, except that there is a more subtle play of form or modelling. After setting in the outline, or shaping the same with a veiner or a parting tool, the leaves should be modelled

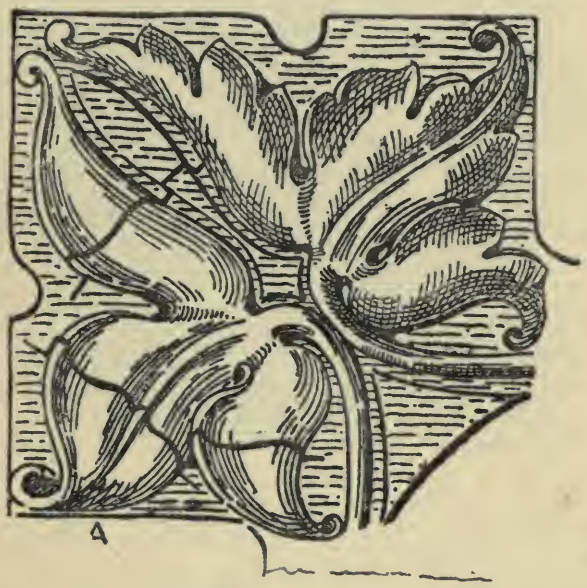


FIG. 33.—FIRST EXERCISE

up with the flatter gouges, B, C, D. (Fig. 28.) The drawing of (or setting out) with the $\frac{1}{8}$ in. veiner, G, is a good method, using this tool to mark in all the drawing, including the cuts, and suggesting thickness

to the edge of lobes. A gouge of this type, or slightly larger, should be used to make the first hollows on either side of the main stalks or veins. Personally the writer always prefers a deep gouge to a parting tool, as the angle at the base of a deep cutting V-tool is sometimes unpleasant to look at. A deep hollow is never so, and can always be opened out without

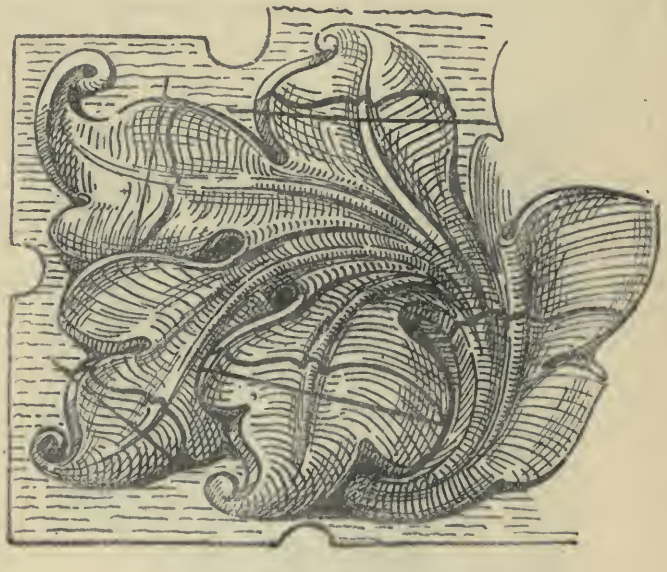


FIG. 34.—SECOND EXERCISE

much trouble if necessary. Concave surfaces are fairly easy to cut to a required shape compared with convex when using gouges, as any slight lowering of the wrist releases the tool by forcing the cut upwards; but when gouges are used with their corners downwards, and following the convex surface, it requires care to prevent the ends from digging in. This can

be prevented by using fairly flat gouges, such as B, C, and D, or even a chisel.

It will be noticed on looking at the sections marked on Figs. 33 and 34, that they have a tendency towards the ogee or cyma reversa form. This is a useful contour to use, giving both concave and convex cutting as mentioned above. It is wise to keep the outside and upper edges as high as possible. These higher

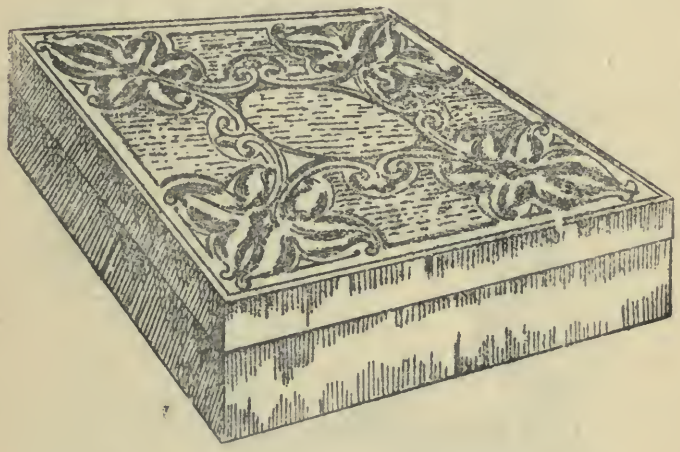


FIG. 35.—APPLICATION OF DESIGN OF FIG. 33

parts should be from $\frac{3}{8}$ in. to $\frac{1}{2}$ in. from the general ground level, and in these examples it would be as well if all the cutting were reduced to as few individual cuts as possible. Thus if, in trying to get a good and clean sweeping cut along the flow of leaf, it is found that the grain picks up against the tool, reverse the cut, but let the cuts if possible be equal in fullness so as to appear as one cut. Although it can be overdone, there is no objection in going over roughed-out

work and reducing the planes or facets into broader looking surfaces.

Work as illustrated should not be cut lower in relief than that shown. It is better to err on the other side and cut deeper. It will be noticed as the work proceeds that a cut or cuts intended for $\frac{3}{8}$ in. or $\frac{1}{2}$ in.

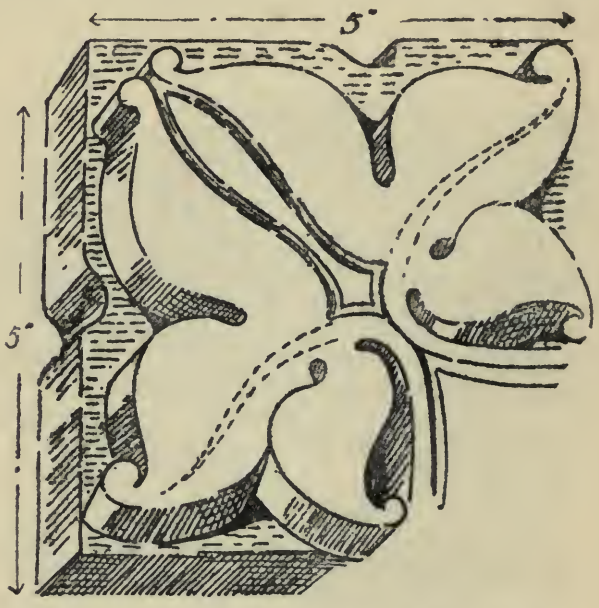


FIG. 36.—PATTERN OF FIG. 33 SET IN AND GROUND CUT AWAY

deep, and looking so at first sight, are found to be less than either when gauged.

It is hard to refrain, when a pattern is marked out upon the wood, from setting in the minor division or lobes, but it is a mistake to do so. These should be cut as at A, Fig. 33, in the first instance. This rule should always be followed ; it is good in method,

as it enables alteration should a better division or cutting up suggest itself while the work is in progress. In exercise, Fig. 34, the group of lobes is left in a simple form, and the carver is advised to attempt to further sub-divide them as may suit his fancy, care being taken not to overdo it.

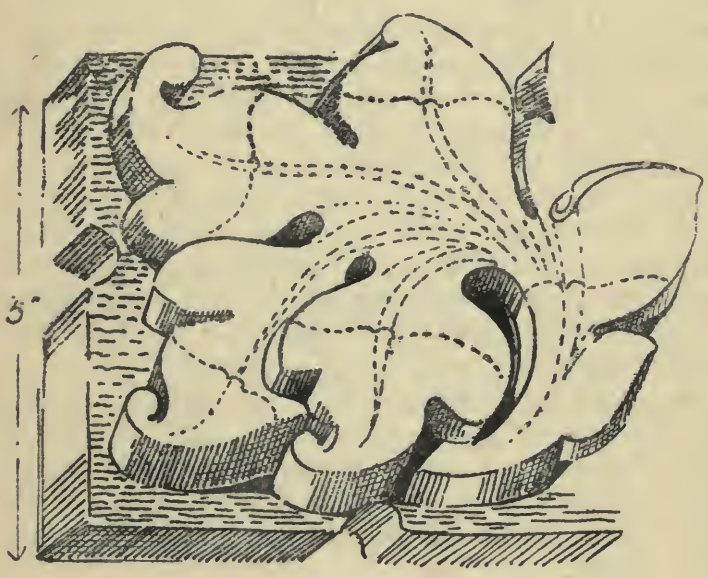


FIG. 37.—PATTERN OF FIG. 34 SET IN AND GROUND CUT AWAY

When the edges of lobes are under treatment it is as well to bear in mind that it adds variety and charm to the carving if the edges are a little varied—that is, splayed or cut at different angles to the ground. This varies the light and shade and also the width of line.

Corner ornaments such as these, when made up with floral forms, are (generally speaking) best kept higher in the centre and running down towards the ground at their outside edges, as they probably would do in nature.

ADAPTATIONS.—In earlier chapters there have been given a few suggestions on applying these units (as we might call them) in different ways to form patterns for various purposes. As it may appear at first sight that this is a question of design, and not carving only, it should be understood that true carving is not the exact rendering of a copy or drawing alone, but a treatment, although limited by the tool used, that should show the individuality and character of the worker. No two workers carve exactly alike, and this is an advantage which gives a personal feeling or character. The drawings, Figs. 33 and 34, which we have been describing, are parts of a more elaborate piece of work which it is intended to deal with in another exercise.

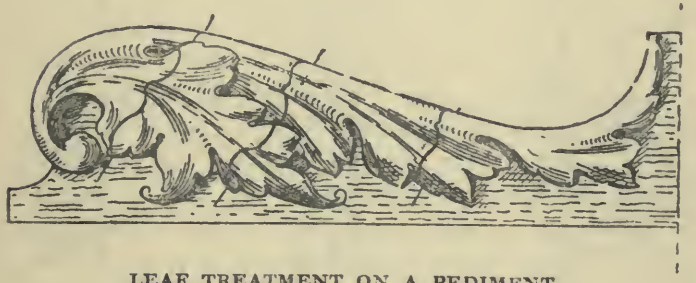
These corner patterns can be applied to almost any rectangular spacing, and the value of the lesson lies in the cutting which shows the varied modelling. A box top has been shown in Fig. 35 carved in lower relief. The design would also do for decoration of a small table.

The proper and more satisfactory form of study would be to carve each unit according to instructions, and to a fairly large scale ; then, when that is finished in a more or less satisfactory manner, to apply the knowledge gained in cutting, etc., to some actual piece of work.

Both the examples, Figs. 33 and 34, should have the ground cut away to a fairly level surface by means of the bent chisel and macaroni tool. In levelling down this background—if the grain allows it—cut away from the leaves or lobes towards the outside ;

otherwise, should the tool slip, the lobes may be dug into and damaged.

Figs. 36 and 37 are sketches showing the appearance of the wood with the pattern set in and the ground cut away before commencing the modelling.



LEAF TREATMENT ON A PEDIMENT

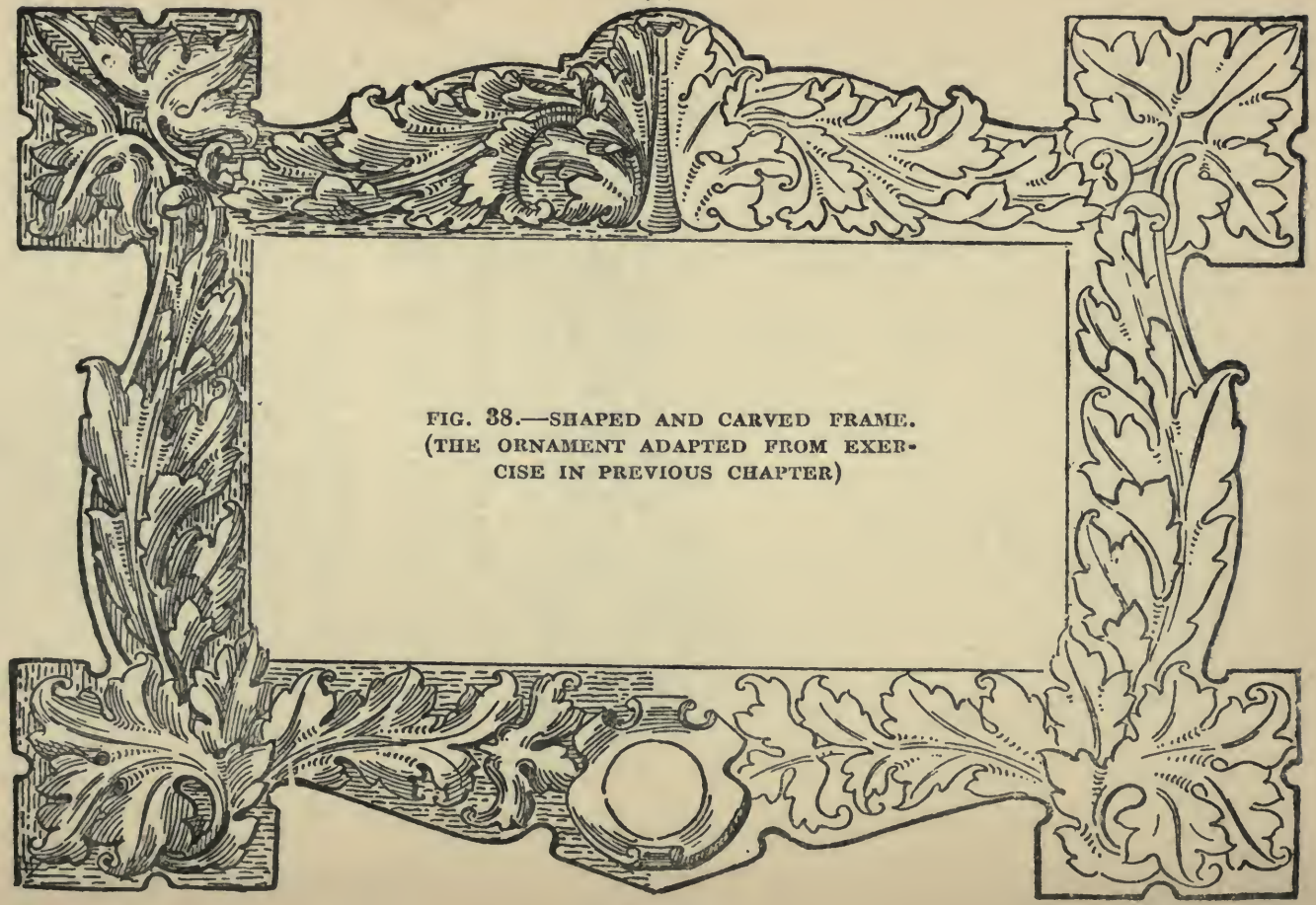


FIG. 38.—SHAPED AND CARVED FRAME.
(THE ORNAMENT ADAPTED FROM EXERCISE IN PREVIOUS CHAPTER)

VI.—A CARVED FRAME

OPPOSITE is shown a mirror frame with the corners treated with the unit given in the last chapter. This frame should be of a fair size in order to get the carving bold, and no carving should be commenced until practice has been had in cutting some of the units upon separate pieces of wood. It is not necessary for the carving to be exeeuted upon a flat surface; indeed, a better effect (and a useful exercise) will result if the wood is first shaped as in the section shown at Fig. 43.

As exercises only, any part of the above pattern that was not treated in the last chapter would be useful. Supposing that the mirror frame has been made up, and that we have transferred the pattern to the surfaee of the wood, run the $\frac{1}{8}$ in. gouge or veiner round the outline, or, if preferred, set in. In this latter case care must be taken not to dig down too deep, as some parts flow over the others. It is advisable to start cutting from the base of the leaves out towards what would be their upper ends. This would give the sweeps of the tool a right direction, and would be with the flow of veins and pipes.

To make this clearer, take for example the upper and centre part (A), and fix it firmly down upon the bench or carving board with its longest edges parallel with edge of bench. Now, leaving a little over, cut away from the centre part (A) on both sides, forcing the cuts outwards to right and left, and along the direction taken by the veins and pipes of leaves. The edges or facets of the cuts will then follow in the same direction, and assist in giving expression to these lines of direction. If cut properly they will also radiate to a certain extent, all of whieh will help to make the

work a successful piece of ornament. It is, of course, understood that we are not always able to do this, owing to the picking up of the grain. When wood will not cut successfully (say towards the right) the

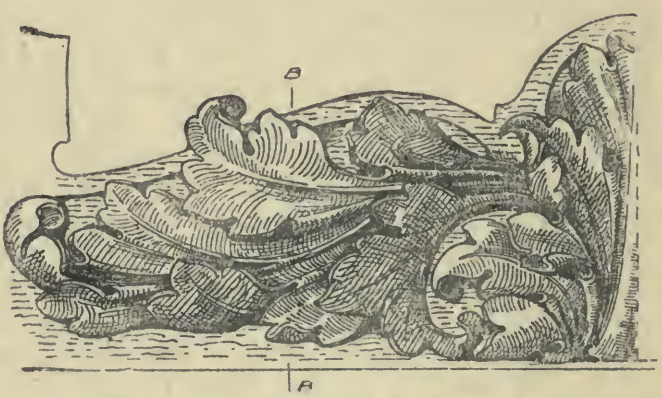


FIG. 39.—DETAIL OF UPPER PART OF FRAME

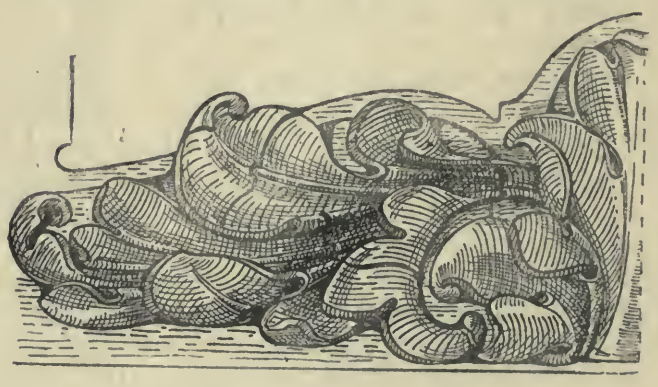


FIG. 40.—DETAIL, SHOWING MASS MODELLING

cut can be reversed along the same line of direction, but towards the left.

If the carver can use both of his hands equally, or his left nearly as well as his right, it is a great

advantage; and to those who are really taking up woodcarving seriously it may be added that this acquirement saves a great deal of time which would otherwise be spent in moving the work. Cuts across

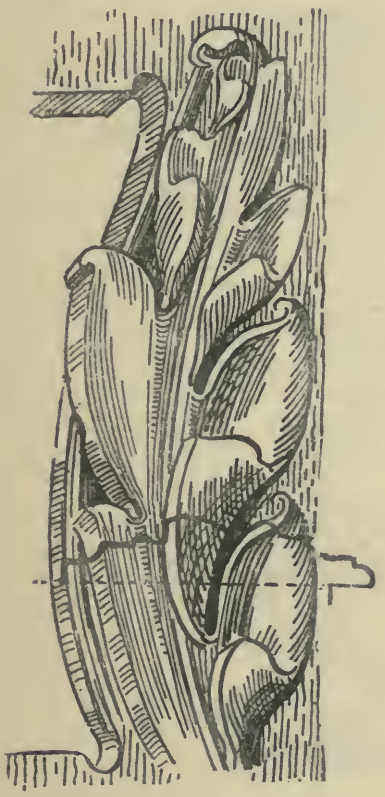


FIG. 41.—SIDE DETAIL (FIRST STAGE)

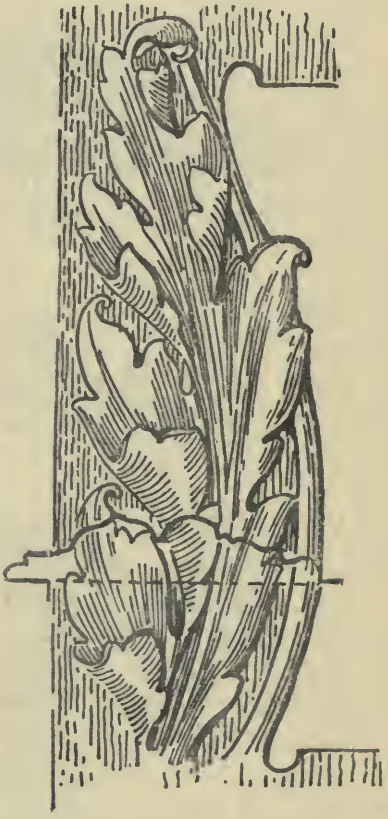


FIG. 42.—SIDE DETAIL (SECOND STAGE)

the flow of line in the direction of line B (see diagram Fig. 39) would have to be faced over or cut out with very shallow or light cuts, otherwise the flow of line would be broken up, and much of the effect would

be destroyed. This is mentioned here as there will often occur cases where, owing to the grain or other circumstances, it is impossible to cut in the most satisfactory direction. In very difficult grain, which

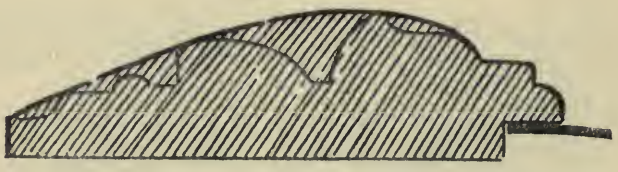


FIG. 43.—SECTION OF SHAPED MOULDING

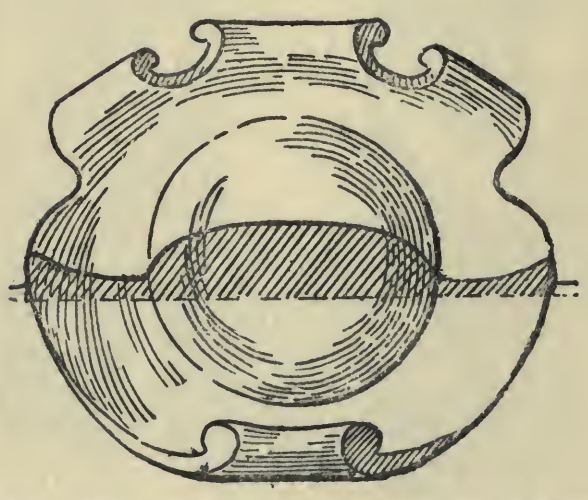


FIG. 44.—CARTOUCHE AT BASE OF FRAME, WITH SECTION

often occurs in odd places, it is best to make two movements simultaneously—a forward or downward movement, with a drawing or sideway action; in fact, a drawing cut, that of a knife and gouge combined. This latter is very useful, especially

in tender places, e.g. sharp edges coming across the grain and especially at the extreme edges or points of leaves.

Fig. 40 is a drawing representing the general appearance which one-half of the upper part of frame should have after the wood has been modelled into the general or principal masses and lobes. This should be very carefully done, and no lesser detail, such as the final sub-division, etc., should be cut until the masses have been rendered as carefully as the skill of the carver will allow. Fewer section lines are drawn on these examples, as it should be easier for the student to read the contour now that several examples have been given in former exercises.

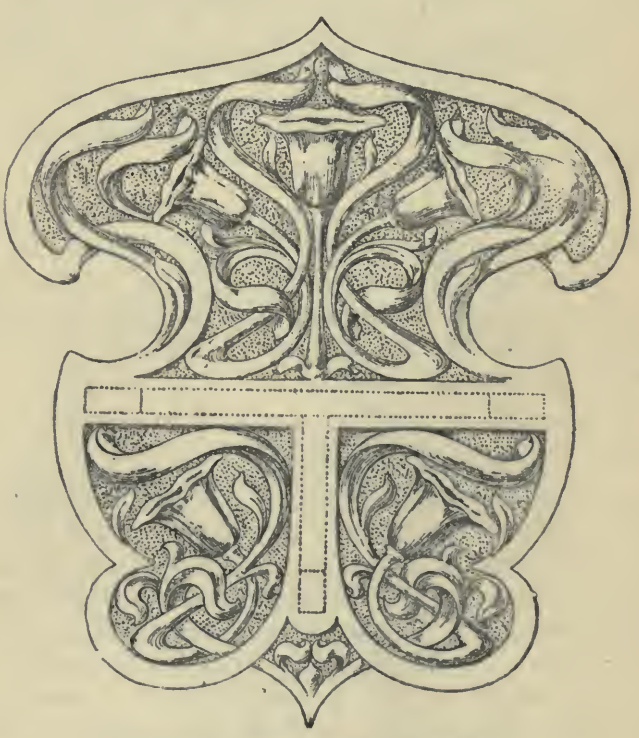
Figs. 41 and 42 are renderings of the side leaves in two stages, Fig. 41 consisting of the main lobes only. Sections are shown upon them in one place only ; the contour otherwise should be read at sight. A section is also given of the cartouche at the base of frame. (Fig. 44.)

A piece of close grained walnut would be a good wood for this mirror frame.

There are a good many ways of rendering the patterns applied to frames of this type. After the carving has been done parts of the ground can be cut or fretted away. This was often done during the middle Renaissance period, and some charming results were obtained ; but as it can easily be overdone great care must be taken not to cut out too much. The more satisfactory way is to treat the edges or outside only. None of this cutting out should be done until the carving has been completed, as it lessens the resistance of the wood, and parts would be liable to break away.

In treating the leaves of the unsymmetrical acanthus, such as this example, the tools must be well looked

to. The pointed and narrow character of the lobes will need a lot of care when the ends are being reached. A blunt tool combined with too much force would probably result in a regrettable break.



DESIGN FOR CARVED BRACKET

VII.—THE DECORATION OF PICTURE AND MIRROR FRAMES

IT is often desired to make, for some particular purpose, a frame that is of more value and is also more ornamental than the ordinary run of moulded frame. Now, if old and valuable carved frames are examined, it will be found that they are made up of several parts. That is, a moulding

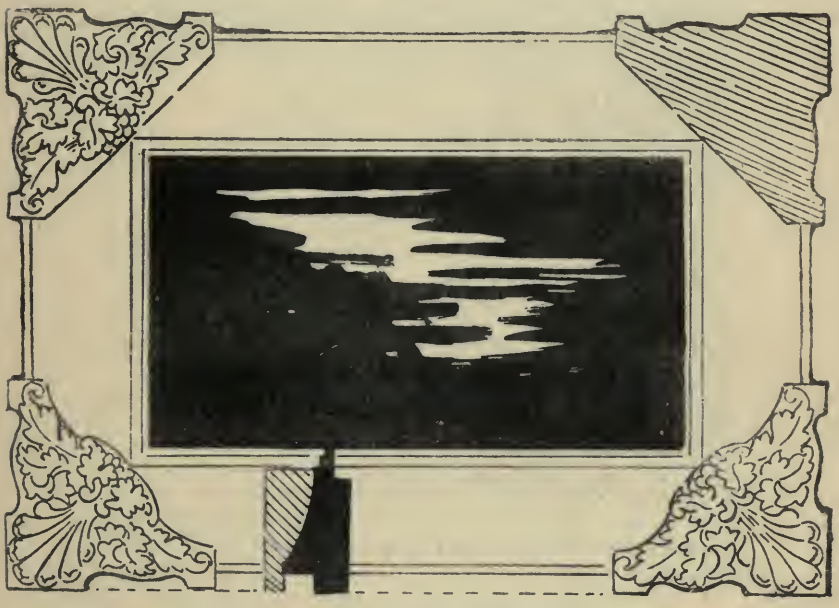


FIG. 45.—METHOD OF APPLYING CARVED MITRE CORNERS TO MIRROR OR PICTURE FRAME

of suitable form was put together in the usual way with mitred corners, after which it was usual to apply covering pieces to be carved, like Fig. 45.

This method was economical where large pictures or mirrors were to be framed. It was also on these lines that the richly gilded frames of the eighteenth and nineteenth centuries were manufactured, only in many cases gesso or corner transfers were used instead

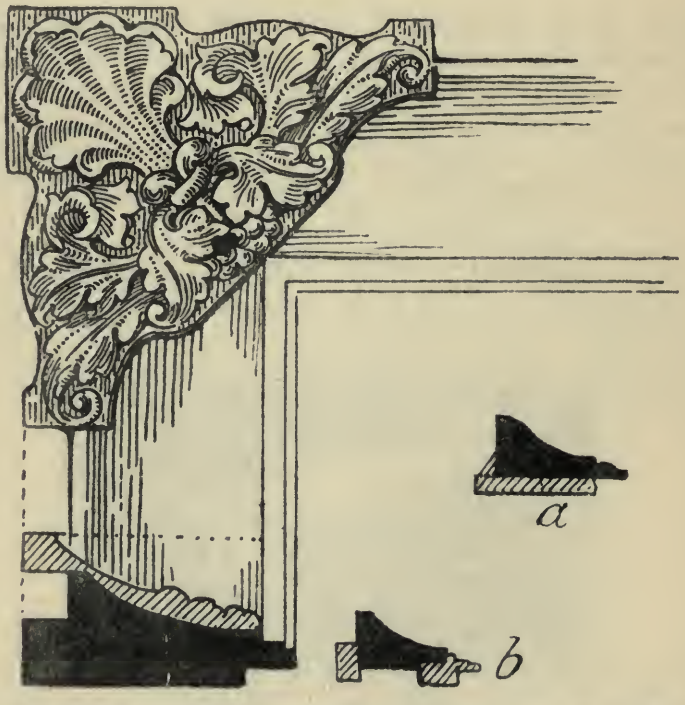


FIG. 46.—COMPLETE CORNER (CARVED) OF FIG. 45, SHOWING SECTION OF FRAME WITH INWARD SLOPE. ALTERNATIVE SECTIONS ARE SHOWN AT *a* AND *b*

of carving. At Figs. 45, 46, and 49, several different sections are given, but the general principle was the same. One system (a good one) was mostly followed; the corner or mitre was covered in its leading part by a radiating or shell-like form, being symmetrical and complete in itself.

This object makes an excellent tie for the corners. The method shown is principally for frames of a large size. Fewer parts and carving from the solid is the rule for smaller frames. If the moulding has a clay pattern taken from the corner so as to give the

FIG. 47 FIG. 48

ENLARGED DETAIL OF CARVED CORNERS, SHOWING FIRST, SECOND, AND FINAL STAGES

required shape for the underneath part of the carved corner it should not be a difficult matter to fit these corner pieces. If preferred, the raised part can be removed from the moulding and a rectangular sectional piece of wood can be used to cover the mitre.

These ideas, which are taken from frames now known as antique, give a wide field of usefulness. The number of different designs that can be got out on this basis is unlimited. In Fig. 45 a rigidly geo-

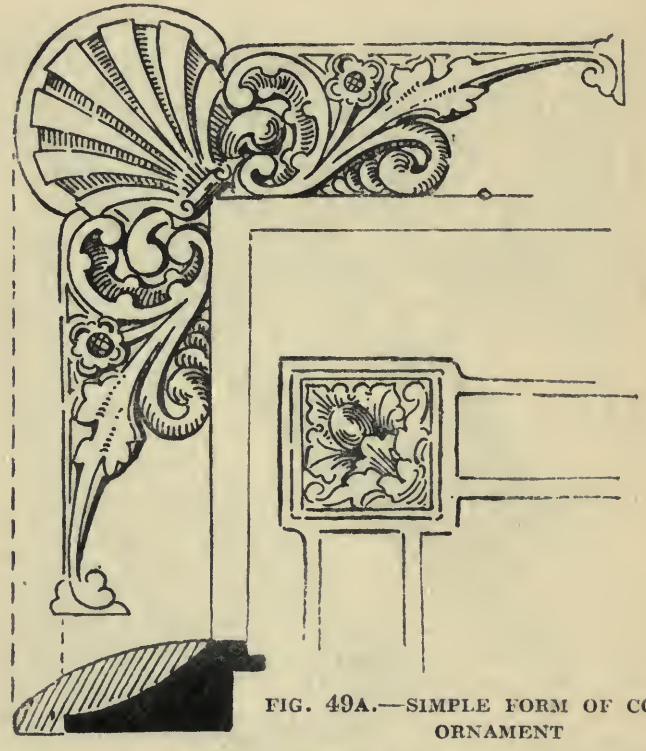


FIG. 49A.—SIMPLE FORM OF CORNER ORNAMENT

FIG. 49.—COMPLETED CORNER, WITH SECTION BEFORE CARVING. THE SECTION SHOWS SLOPE TOWARDS OUTSIDE EDGE OF FRAME

metrical outline is kept, but it can readily be understood that it is possible, in order to get a richer effect, to cut away this geometrical outline, leaving the outside of the floral and other forms to make a broken line.

We are not tied down to rectangular frames, but geometrical forms of all kinds can be surrounded

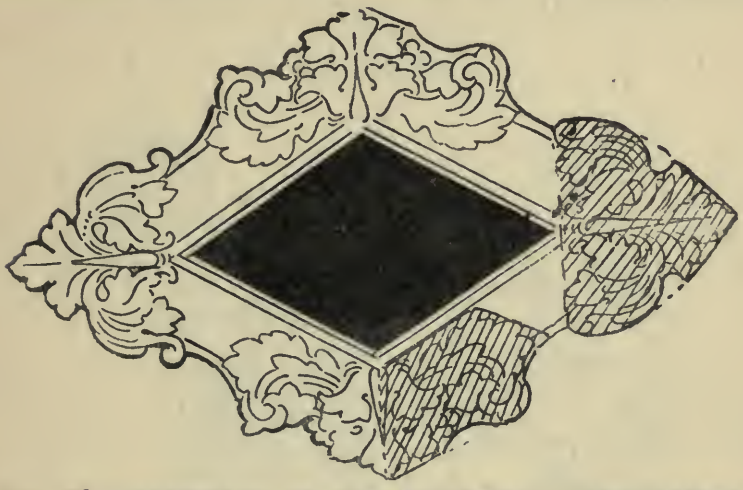


FIG. 50.—EXTENSION OF THE MITRE-AND-JOINT-COVERING PRINCIPLE TO LOZENGE SHAPE

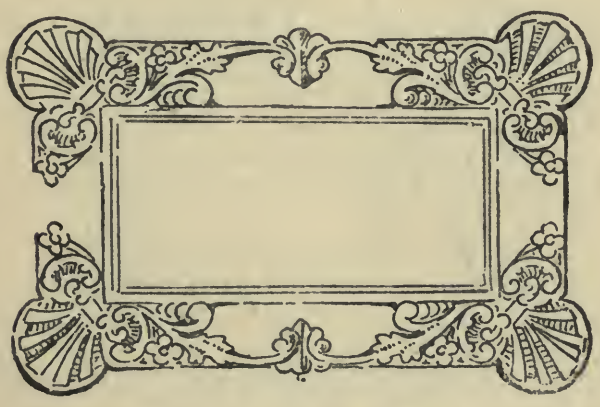


FIG. 51.—EXAMPLE IN WHICH THE MITRE OR APPLIED WOOD IS CARRIED TO THE CENTRE OF TWO OR MORE SIDES OF THE FRAME

in this manner—lozenge, circular, polygonal, etc. (See Fig. 50.) Different stages of the carvings are

given, and two kinds of sectional form: Fig. 45, where the slope is inwards, and Fig. 49, where it slopes towards the outside.

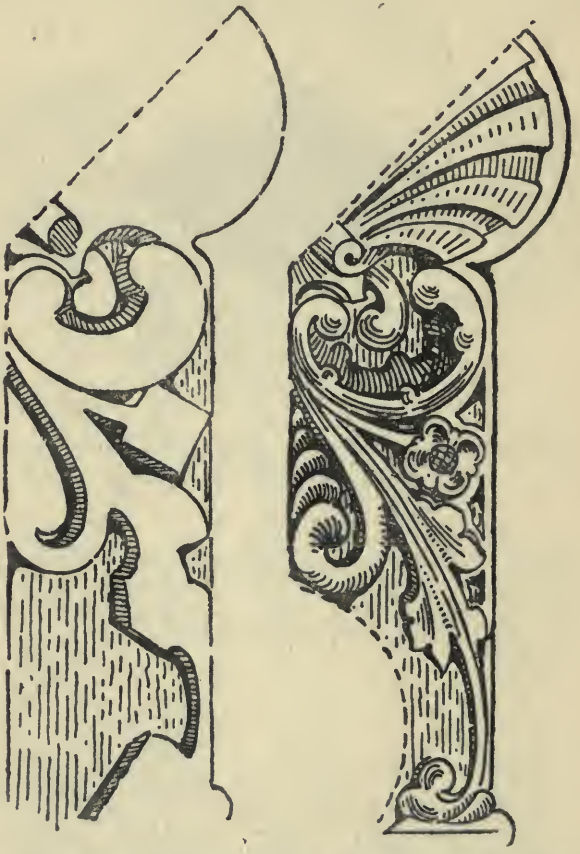


FIG. 51A.—ENLARGED DETAILS OF FIG. 51, SHOWING FIRST AND LAST STAGES

VIII.—CARVING A HERALDIC SHIELD

OWING to the revival of Heraldry in recent years the carving of coats of arms with the mantling attached has become very popular. Owing to their conventional rendering in true heraldry, these decorations are particularly suitable for woodcarving. There is also an almost unlimited supply of good designs and historic examples to be seen in our public buildings and churches, many in wood, stone, or metal, others depicted in stained glass windows. A glance at these will at once suggest how suitably they can be rendered with the carving tool.

Enough has been done in the former exercises to give some general idea of the treatment of acanthus foliage. Now, as one of the best periods for our purpose was the Early Renaissance, we cannot do better than suggest a coat of arms of that time, in which we shall be able to make use of a flowering treatment of the acanthus leaf much used by craftsmen about 1550.

This leaf was developed from an earlier form of mantling suggested by the flowing plume or drapery suspended from the helm of knights to distinguish them during battle or in the tourney. Later this was rendered in a label or scroll form (see Fig. 53); but at the period of which we are treating these scrolls had become foliated in a fanciful treatment of leaves. (See Fig. 52.)

In this example the arms, etc., are carried upon a shield form which should, for the sake of boldness, be 10 in. by 14 in., and about $\frac{3}{4}$ in. to 1 in. thick.

FIG. 52.—HERALDIC SHIELD
(EARLY RENAISSANCE)

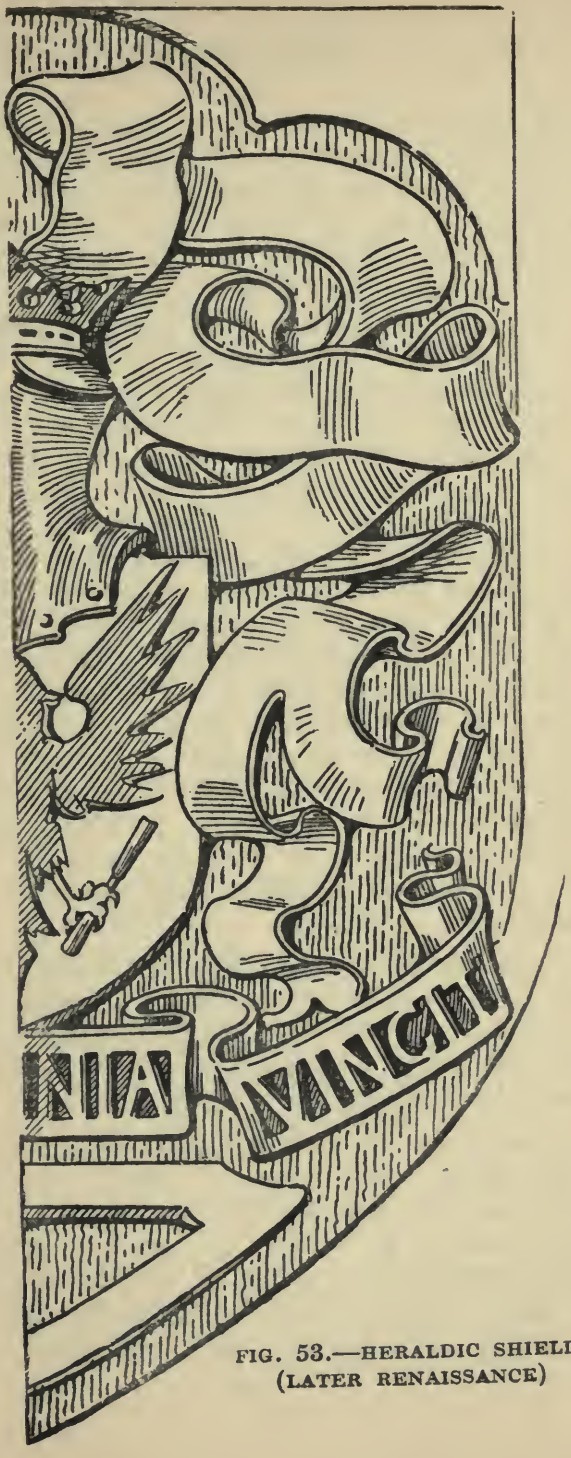


FIG. 53.—HERALDIC SHIELD
(LATER RENAISSANCE)

After being lined in, the ground is removed as shown in Figs. 54 and 55. The aim should be to keep the main body of the foliage shallow, or flat, although those parts shown in relief and folded over should have a fair projection, say ⅜ in., in their highest parts. The section lines on the drawings will give some idea of the general modelling. The shallow gouges should be used to do most of the actual carving, although the little deep hollows at the termination of some of the lobes will need a tool with a quicker curve. At this stage of work bent gouges of various forms would greatly help to overcome those little basin-like hollows that improve this class of leaf. That part of the mantling which passes behind the helmet should be cut in little grooves after the style of engraving lines, and in the same direction and place as that shown in the illustration. (Fig. 56.) This may be done either with a V or parting tool, or with a veiner. If carefully done and in the right place it will be found to be very effective, but it should be remembered that these grooves must not be too fine and close together; a certain amount of radiation should be aimed at. A shell or flute-like hollow in as long a sweep as possible would add to the effect of the foliage.

The shield should be slightly rounded and the charge or pattern on it kept flat. That is, very little or no modelling should be attempted; simply cut the ground away and clean up to the edges of the wings, body, etc., of the bird.

The drawing of the helmets (Figs. 56, 57, and 58) will give some idea of their shape, and it should not be difficult to model them with the carving tools. Of course if one has a knowledge of the elementary principles of Heraldry it is a great help, but it is not necessary to go very deep into the matter, as the arms of cities,

boroughs, counties, etc., are always there for us to copy correctly.

As the mantling is not a part of the arms proper,

FIG. 54.—DETAIL OF MANTLING

FIG. 55.—DETAIL OF MANTLING

we can make use of any treatment that best suits us so long as it is historically correct in style. There are many varieties of labels upon which the motto

is usually placed. The lettering is best kept simple

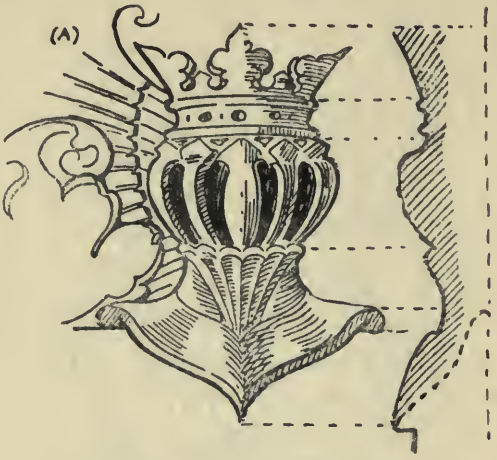


FIG. 56.—DETAIL OF HELMET
(FIG. 52)

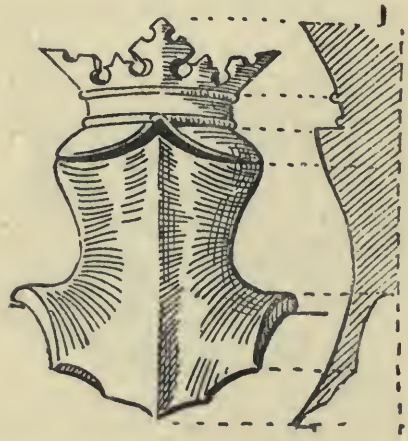


FIG. 57.—DETAIL OF HELMET
(FIG. 53)

in treatment for carved work. That shown in the

illustration, where the inter spaces only are cut away to the depth of $\frac{1}{8}$ in., is suitable and effective. The tops and bottoms of the letters run into the body of the label, and all that is needed are careful spacing and a neat and clean background. The label itself should be shaped and carved first, the letters afterwards. It will be noticed that these do not project beyond the general surface, the fret-like treatment giving the whole a light appearance.

THE SETTING OUT is shown in Fig. 59. It would be easy to alter or re-arrange this system of foliage to suit almost any shape, and it is also possible to reduce

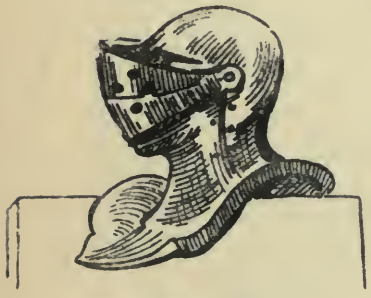


FIG. 58
ANOTHER TYPE OF HELMET

FIG. 59
SETTING OUT OF DESIGN

the most complicated looking coats of arms to simple lines and treatment with a little practice.

In taking a final survey we note the different projection ; for example, the centre of the visor of helmet should be one of the parts in highest relief, and the lower part of the helmet (the shoulder piece), as it projects over the shield, should be the highest of all.

(See Figs. 56 and 57.) The actual relief of the foliage should be read from the drawing.

When the wood is obtained of sufficient thickness it is well to let the shield have a double curvature—that is, from side to side and from the upper part down towards the base. Sections of the two principal helmets are given, and the serrations of the acanthus are shown at the junction of the same with helmet. (See Fig. 56, A).

The alternative design, Fig. 53, with ribbon mantling, is not so easy as it might look, very careful cutting and study of the subtle curves being necessary if it is to be made a success. Fig. 58 is another type of helmet, mostly used on borough arms.

HERALDIC GRIFFIN

IX.—APPLICATION OF CARVING TO FURNITURE

1.—AN ELIZABETHAN OAK CHEST

OLD oak chests with carved fronts are very much in demand, but the supply is limited, and it often happens that we see such an article in the possession of a friend which gives rise to a certain amount of envy. We cannot, of course, all possess a genuine antique that has been nicely carved; but it is not a difficult matter

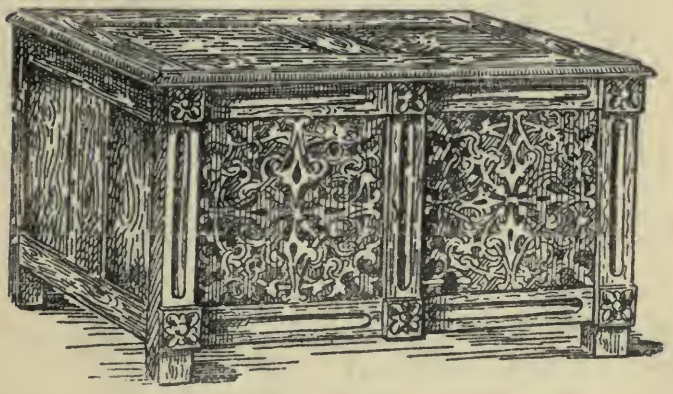


FIG. 60.—ELIZABETHAN CHEST

to make one for ourselves, and decorate it with carving executed in a suitable manner, true to historic tradition, so that, when nicely formed, it is far from easy to tell it from the antique.

Many genuine antique chests are not really well executed as far as the carving goes, although they

always possess a charm owing to the honesty of their purpose and the bold free cutting. They form welcome pieces of furniture for the hall entrance, lobby or living room. They can be used for a great variety of purposes, as linen chests to holds rugs or any miscellaneous work that can be put into them in clearing up a room. They can be constructed in almost any size. At one time they were pretty common in the country districts, but by now collectors of the antique have made a fairly clean sweep of them.

FIG. 61.—HALF OF CARVED PANEL OF CHEST

It would be interesting to describe the principal styles of decoration and pattern, but this would trespass too greatly upon the space that should be devoted to instruction. We therefore cannot do better than take as a period the Elizabethan, in which excellent results were obtained. As the front of such an article as a chest would often come in contact with the person in the rubbing and brushing of clothes in passing, etc., it stands to reason that the relief should be low and the general surface flat. Some Elizabethan work was no more than $\frac{1}{8}$ in. in

relief. A general and useful rule is to have it about $\frac{1}{4}$ in. to $\frac{3}{8}$ in. high from the ground, which is sunk in the panel.

Most of these Elizabethan patterns show in their detail a Moresque influence, being composed of interlacing strapwork, the setting out of which has a certain geometrical basis. (See Figs. 61, 62, and 64.)

Although, as just stated, the chest can be to almost any size, the example chosen is about 3 ft. long by 1 ft. 6 in. wide and 2 ft. high. The method of letting

FIG. 62.—SETTING OUT

FIG. 63.—SHADING

in the panels is shown in Fig. 65, the correct antique style for country chests. It is not given here as the only method, or even the best, but it is the usual in the antique. No nails or screws were used, oak pegs being substituted, as in the best modern work for church furniture.

After carefully setting out the pattern on the geometrical basis shown in Figs. 62 and 64, it is advisable to shade or otherwise mark in all the background that is to be cut out. (See Fig. 63). White chalk will do. Then set this all in with the different

gouges that will most nearly follow the contour. Do not set in too deep at first; about $\frac{1}{4}$ in. would be best, as one always cuts down deeper still in cleaning up.

A little router (Figs. 68 or 69) is often used for the last cut, as it can be so adjusted to keep an even depth. These tools want careful using; otherwise in awkward places the ground will be torn up. The blade should not be (as commonly) like a chisel,

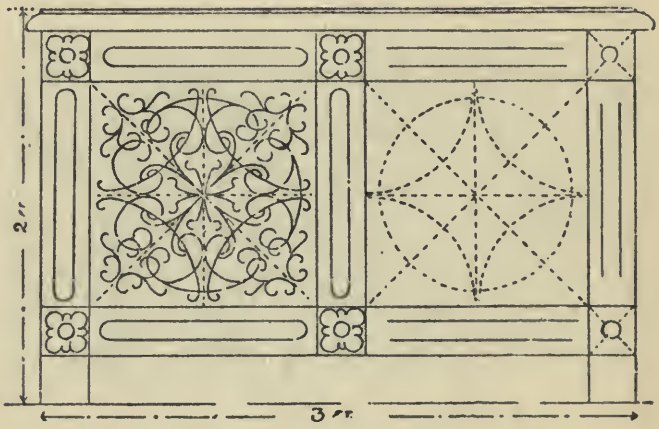


FIG. 64.—OUTLINE ELEVATION

but should have a foot to it, giving a more or less horizontal cut—not a scrape, which is the case with the older patterns. (See Figs. 70, 71, and 72.) The wooden routers are easy to make and cheap to buy, but where much work of this class is done an adjustable metal router is a desirable article.

When the ground is all out and the bottom clean, attention is then paid to the interlacing, but not before. The general rule to follow is to pass under and over alternatively. (See Fig. 61.) Parts of the pattern

should be shaved off; that is, slight cuts taken to make the running straps pass under and over one another. This should be carefully observed.

The eyes or little circular hollows are now put in. This is done with a small gouge or veiner, and is made by gradually twisting the tool, held in a vertical position, and pressing on the centre of the palm of the hand. The panel is now practically finished, although it is best to give it a good look over and to make any little alterations that seem necessary.

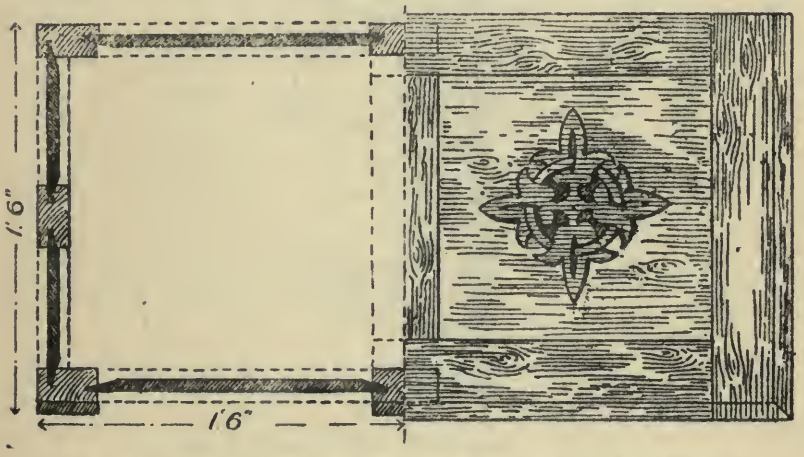


FIG. 65.—SECTIONAL PLAN FIG. 66.—CARVED TOP

In treating the carving generally, this flat work is mostly (nowadays at least) left until a later stage than the deeper work; for although it is less difficult to do, and there is less to learn as far as cutting goes, it is necessary to be quite sure what one is about. Decision in the cutting can only be obtained by practice on bolder work. Any little mistake shows directly in a pattern set out on a geometrical basis.

This is especially the case with strapwork. It is unfortunate, however, that strapwork is not more generally used than it is, as the effects are remarkably good without an undue amount of labour. It does not readily hold the dust; it is strong; to a certain extent it is protected by its even surface, and can be made in any degree of richness. In fact, the panels would probably look well with half the detail omitted according to taste.

FIG. 67.—MOULDED STILE AND RAIL

The plan of the lid, Fig. 66, shows how the top can also be carved in some simple pattern, preferably based on the unit or units of the larger panel. The actual panel as illustrated is supposed to be about 13½ in. square; that is, the part showing between the stiles and rails. It is best, in setting out, to make the pattern in this case 12 in. square, so as to allow a slight margin all round to free the pattern. The little carved blocks on the front can be omitted if desired. The hollow should be cut in the stiles and rails as

shown, unless the edges are to be moulded as in Fig. 68, in which case the moulding should be stopped.

FIG. 68.—ROUTER

FIG. 69.—ROUTER

FIG. 70
OLD STYLE

FIG. 71
WITH SOLE

FIG. 72
IMPROVED

If it is to be a correct copy of the antique the two ends can also be carved.

X.—APPLICATION OF CARVING TO FURNITURE

2.—ORNAMENT FOR A PEDIMENT

THE design illustrated at Fig. 73 suggests the carved treatment of a pediment panel. The leaf forms shown in Figs. 73 and 74 are those commonly used around shields, etc., upon which the arms of cities, boroughs, schools, and regiments are depicted.

This leaf is a very useful one to master, both in its general composition and also in the carving. It can be elongated to suit any space, and twisted into any number of curves and scroll-like forms. It was first suggested by flowing drapery in the days of early heraldry, since which time it has taken on the leaf-like treatment. A helmet is sometimes placed above the shield; or, instead of that, some other device, such as a mural crown, as in our illustration. The shield here is left plain in order that it may be filled as required.

THE LEAF.—If we look carefully at this class of scroll-like leaf we shall see at once how excellent it is as an object for woodcarving. The long running cuts and bold clean sweeps we can give the tool make it a delightful object to work upon; therefore, having massed our leaves in such a manner as to be suitably arranged for the shape of the panel, commence to work it up by first setting in the outline with the different gouges, as in the former exercises. Sink down to about half an inch.

The eyes or pipes, Fig. 76, A, are then sunk with a small gouge with a quick curve. A parting tool

should now be used to cut the channels, B. These channels should gradually narrow towards the ends of the lobes. This part of the work should be very carefully done as it is the key for the surface modelling. It is, in fact, the judicious rounding over of these channels or V-cut forms that makes up the chief modelling.

A flat gouge should next be taken, and those parts of the minor lobes that fall below or appear to pass under the others pared down to the required depth as shown in Fig. 74. Small V-cuts can then be made on either side of the pipes, working from the eyes, A, Fig. 76, and narrowing as the tool works away from them. The surface modelling is then cut in, keeping in mind the general radiation from stem to end of leaf. In those places, C and D, Fig. 74, where the ribbon-like ends turn over, a clean and careful cut is required. The contour appears to flow and must be cut with a gradual twist of the wrist. Of course, this may only be apparent, and several cuts are needed to get the effect; yet they should be so blended together as to appear to be one cut. It is this appearance of ease and clean cutting that gives value to work. These suggestions refer to the typical leaf, Fig. 74.

In relation to the composition (Fig. 75) the planes should be kept as simple as possible, without destroying the peculiar character of the leaves. The eyes of pipes are best sunk fairly deep, so as to appear like black recesses. The general modelling is shown by means of our usual section lines. At the ends of most of the lobes there is a curling-over which gives a very pleasing piece of cutting. One edge is brought up in a fairly sharp line, the hollow at the end suggesting a twist of the wrist in using the tool. (See also E, Fig. 74.)

It is well to sink down to a fair depth around the

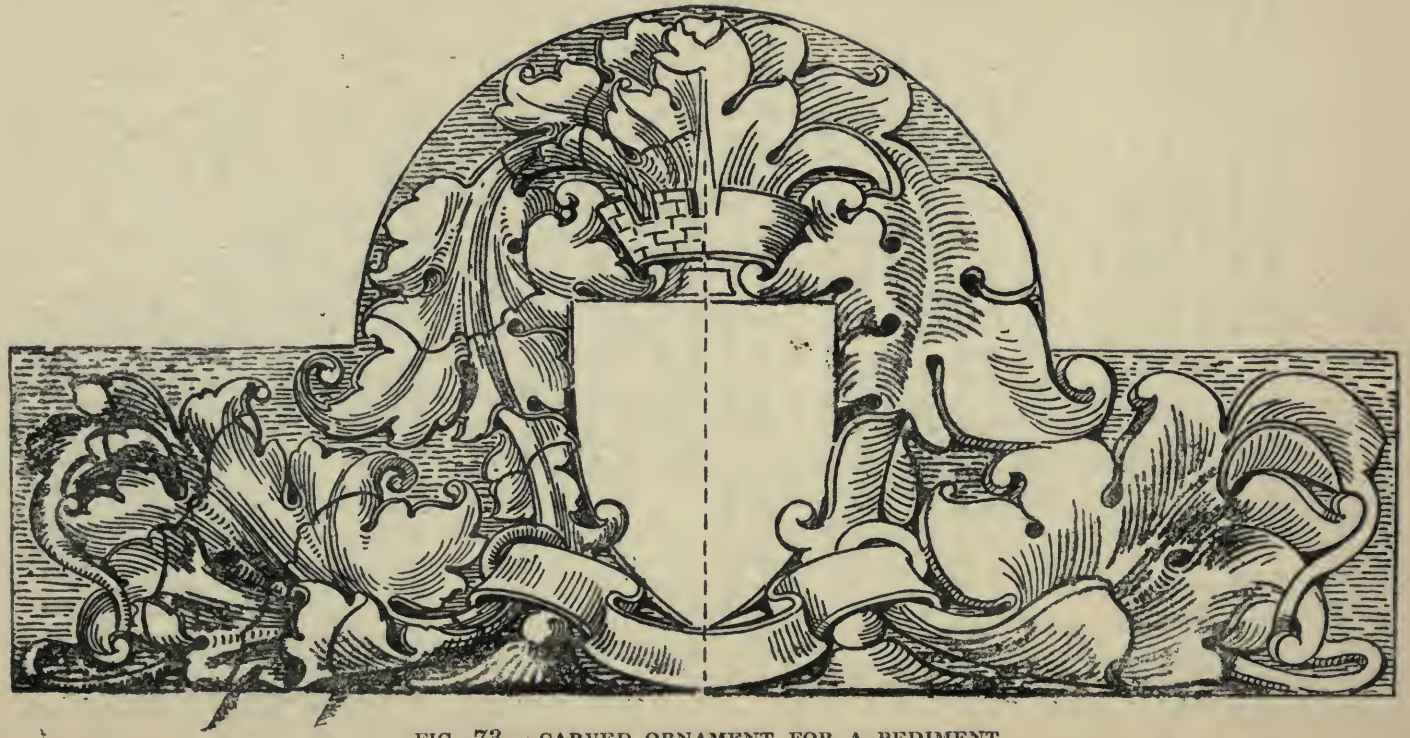


FIG. 73.—CARVED ORNAMENT FOR A PEDIMENT

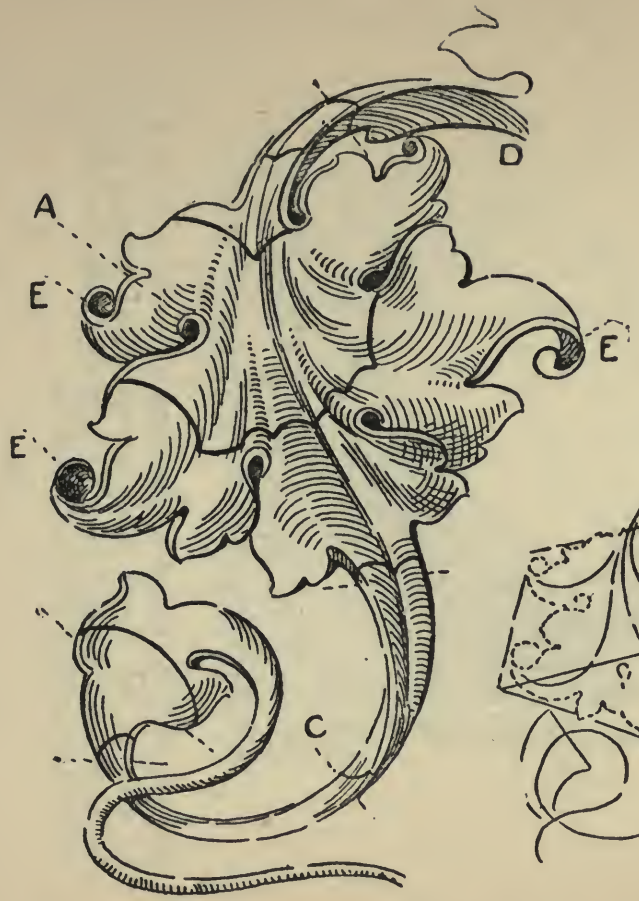


FIG. 74—THE LEAF FORM

FIG. 75.—COMPOSITION

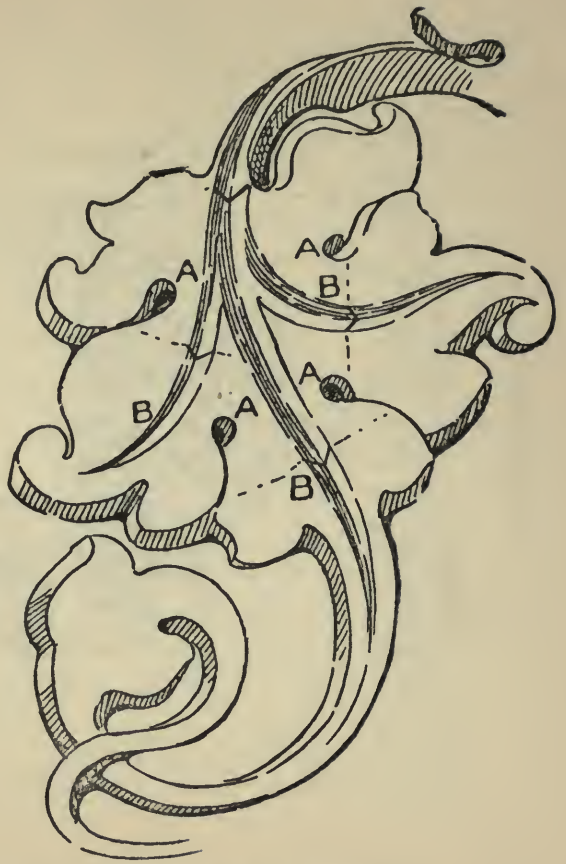


FIG. 76.—FIRST STAGE OF CUTTING

shield, so as to give it a certain amount of prominence. This shield can be of any shape required, governed by the style of arms chosen. It is a good plan to

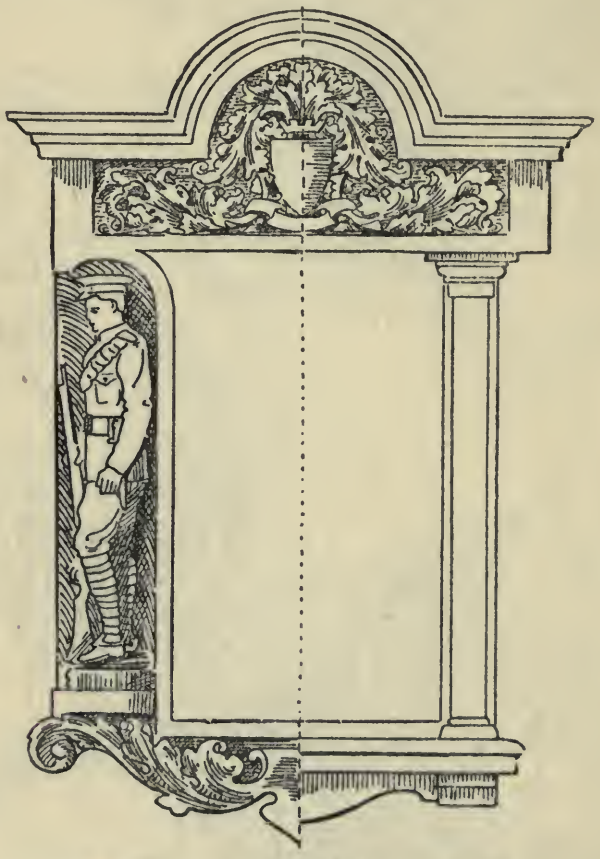


FIG. 77.—SUGGESTED APPLICATION
(Suitable for War Roll of Honour or similar object)

depress the lower part, so as to sink behind the label or ribbon, the upper part appearing to project a little forward. It should also be slightly convex—that is, the sides sloping from the centre.

Application of Carving to Furniture

If desired, the leaf-like scrolls can be made simpler by merely reducing the number of the smaller lobes or division.

Application.—The example (Fig. 77) of the application of the carved pediment panel to a War Roll of Honour or similar board for the reception of names is merely an illustration of how and where the panel can be applied. Reduce the detail, and elongate the panel either way. This style of leaf can be made to fit almost any space, and can be used with plain mouldings or carved borders (as in Fig. 77) and other framing. A thorough mastery of the leaf (Fig. 74) is to be recommended to all who are taking up carving for trade purposes, as it is constantly recurring and commonly in use for public notice boards in important buildings.

DESIGN FOR CARVED WALL POCKET

XI.—APPLICATION OF CARVING TO FURNITURE

3.—DESIGN FOR CABINET DOOR

IN some parts of the country a few years ago nearly every home possessed a hanging corner cupboard. Some of these were plain, while others were ornamented with mouldings and carving. These cupboards, when once firmly hung, are very useful for sundries which it is necessary to keep out of reach of the small rising generation, and, owing to their elevated position and the protection thus afforded them, they make excellent objects upon which carving can be applied.

In a living art craft, which carving should be, it would seem that here we have an opportunity to show our pride of race and love of the country or county in which we live. Fig. 78 gives an idea of how this idea might be expressed. The design contains the National plant emblems of England, Scotland, Ireland and Wales, the idea being that upon the cartouche or shield the arms of any county or city can be carved or incised as required. Those of London are used here because they are simple and effective.

To be useful the carved part as illustrated should not be less than 12 in. by 24 in.; otherwise the interior space will be too limited when the cupboard is made up. A block plan is given at Fig. 82, showing how many of the old cupboards are arranged so as to allow them to fit into the angle of the wall and yet have a projection in the pendiment and base on either side. (See Figs. 78 and 82, A A.)

The background will in this case be like a saucer

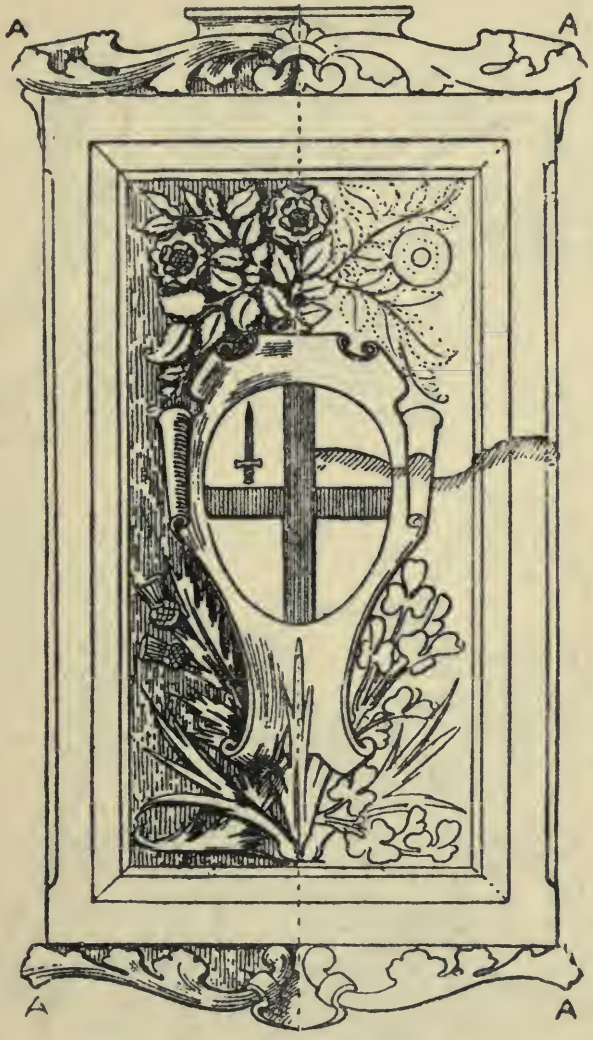


FIG. 78.—DESIGN FOR DOOR OF CORNER CABINET, WITH THE ROSE, THISTLE, SHAMROCK, AND LEEK EMBLEMS AND SHIELD OF ARMS

FIG. 79.—THE ROSE FEATURE

FIG. 80.—DETAIL OF SHAMROCK

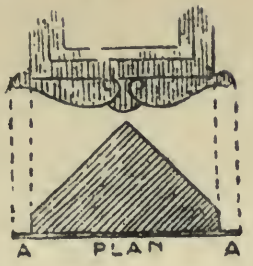


FIG. 82.—SKETCH PLAN

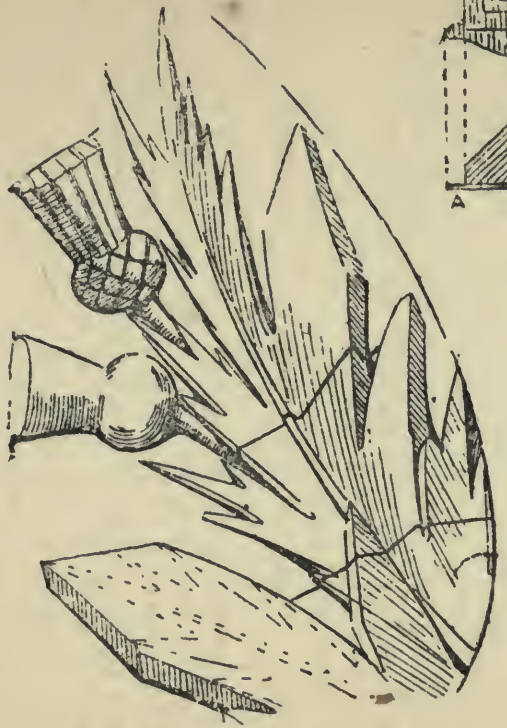


FIG. 81.—BLOCK TREATMENT OF THISTLE

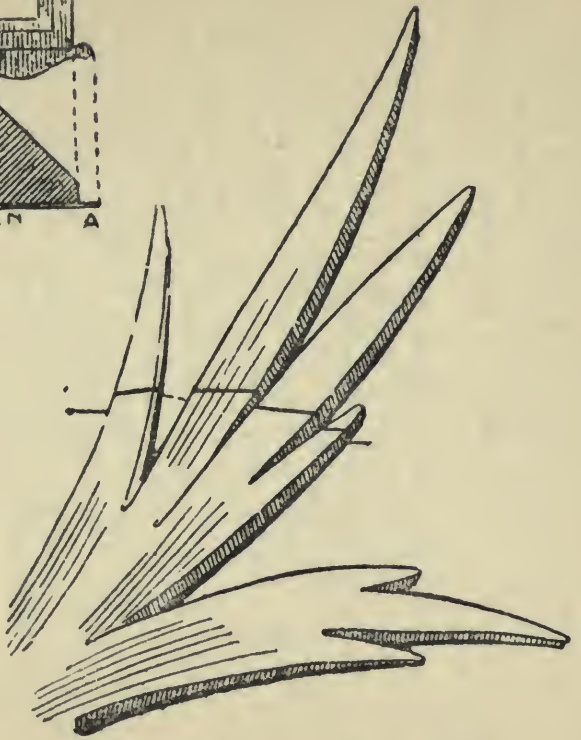


FIG. 83.—BLOCK TREATMENT OF LEEK

in cross section, the side of panel coinciding with the rim and the centre being fairly deep hollow.

The shamrock and the leek are shown in Figs. 80 and 83, the section lines of some parts being given upon them.

There is room for a great deal of individuality in the treatment of a panel of this type, and much depends upon the use made of the suggestions that occur while cutting. The question we should ask ourselves is, would this or that part look better raised or depressed, bolder, or melting into the ground ? The panel should occasionally be released from the bench and placed in a side light to note the effect, and as a guide for further cutting. The shield should be fairly bold, and raised on its outside edges so as to give it the necessary prominence. The scroll-like rolls on this shield or cartouche must be very carefully followed out, or a simpler form could be used in its place.

Walnut or satin walnut would be the best wood to use for this panel; and it should be carved on a piece about $\frac{5}{8}$ in. or $\frac{3}{4}$ in. thick so as to allow for sufficient relief. As the height at which these cupboards are mostly hung protects them, it is admissible to undercut, especially around the shield, but this part of the work should be left until the last.

After being transferred, set in, and squared out in general form, attention is paid to the chief characteristics of each part or plant. Take, for instance, the rose at the top. Its section is shown in Fig. 79, B. That is the first cutting. The form, being based on the Tudor rose, the setting out is somewhat geometrical; and as the form is traditional it should be finished off as indicated in the detailed flower. If care is taken to choose gouges which most nearly fit the contour of the petals, a very neat and clean cutting can be obtained, the general idea being to have a double saucer-like treatment with a thickness or lip in the

centre of each petal. For this purpose the tools used must be very sharp, and be frequently stropped.

The raised centre is best shown by cutting a square network across by means of the chisel, or a V-tool, the squares thus formed being slightly rounded afterwards by paring the corners off. Some of the cutting sections of the rose leaves are shown in Fig. 79. If, after working as indicated, the modelling appears tame or shallow, hollow the sunken parts more and cut deeper where possible in order to get a stronger light and shade. It is also well to sink down between the leaves to a good depth, so as to have some very deep shadow to throw up the leaves.

The carving of the thistle is to be carried out on the same lines, the cutting up and detail being left until the last. It will be noticed that the calyx of the thistle is treated in very much the same way as the centre of the rose. All these forms are, and should be, more or less conventional in form.

In the general scheme of carving this panel, it would be as well to deepen all the background as the central line of panel is approached. This would give the cartouche or shield a bolder relief. Those parts of the background that show between the thistle and the shamrock and the shield can be cut extra deep with good effect.

XII.—APPLICATION OF CARVING TO FURNITURE

4.—GOTHIC TRACERY

THE present exercise relates to the execution of Gothic tracery, and the example chosen (Fig. 84) gives one of the many ways in which it can be employed in the decoration of furniture. In early times some such tracery or open work was introduced into the doors and sides of cupboards, in order to allow the air to enter, thus keeping the food that was mostly placed within them fresh and sweet. They were more or less in use in the monastic refectories. Some such cupboard would be useful at the present day for articles of light food, which may often stand on a sideboard exposed to flies and dust. If our proposed cupboard doors were lined or backed with fine perforated zinc and the tracery executed in oak, we should have a pleasing effect in the contrast between the oak and zinc, especially if the former were fumed. The perforation should be fine enough to keep the smaller flies out, at the same time allowing the free passage of air. (See Fig. 84, B.)

The general style of our example is that of the Perpendicular or Tudor period. The ogee shaped openings being a characteristic of that style, the legs of the base or stand are best treated plain. Except for the chamfered edges there should be no ornament. The front of the upper part of lower member is composed of a low or depressed arch. There is no need to have quite so much tracery in the upper member. This could be as in Fig. 87 for each door, or there

might be a group of three such units. Any straight grained piece of oak of fairly close texture would do for the panels and should be from $\frac{1}{2}$ in. to $\frac{3}{4}$ in. thick, preferably the latter, as tracery looks best when cut in deep relief.

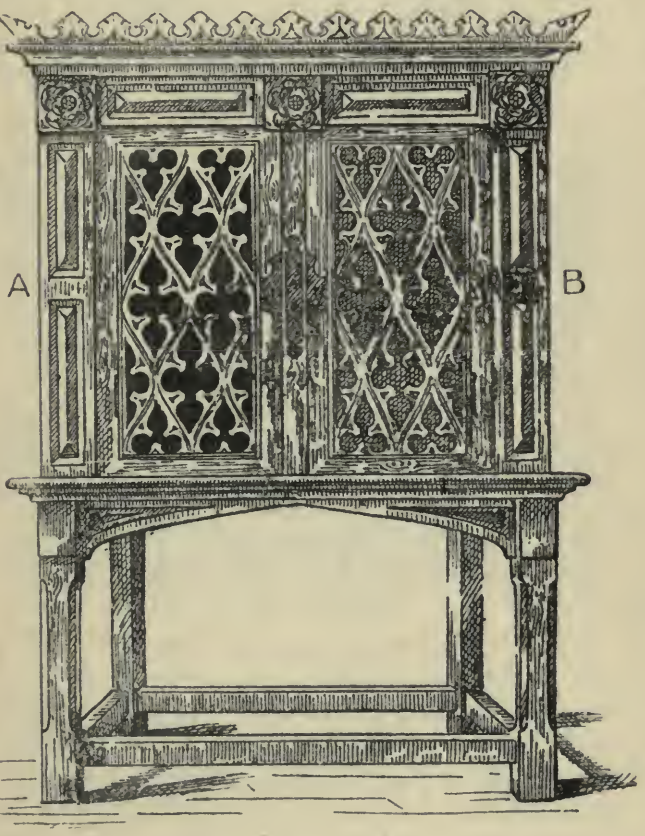


FIG. 84.—CUPBOARD WITH GOTHIC CARVING

After setting out these patterns on the geometrical basis shown in Fig. 85, C, the circular holes should be drilled by means of a standard extending bit (Fig. 95) which can be regulated to requirements.

This is, of course, used in a hand brace, unless access can be had to a fairly large drilling machine. The latter makes easier work than in the case of the brace. The drilled holes are shown in the upper part of Fig. 85, C. When these have all been drilled the centre parts of the ogees should be removed (see shaded part in centre, Fig. 85, D); this and the ogee ends are opened and removed by means of a keyhole saw.

THE CARVING.—We can now commence to mould or cut the cusping. The different lines suggesting the filleted edges and curved splays having been carefully marked in, take a small slip of wood, just large enough to cover the drilled holes, etc., with a little to spare, in the centre of which a screw of convenient size is driven. The head of screw should be true and sharp, and must be at right angles to the surface of slip.

This screw is regulated up or down according to the depth of splay hollow or chamfer required, and the sharp edge of the head is worked or rubbed against the sides of the drilled openings, thus giving us a uniform line at the required depth upon the vertical sides of the holes as the panel lies on the bench. (See Fig. 92). A straight gouge of fairly quick curve can now be used to rough out the cuspings, the first cuts of which are shown in the upper part of Fig. 90, F, care being taken to chip well above the marked line, so that enough wood is left for the proper cleaning up of the curves by means of the curved or spoon gouge, Fig. 88. This gouge should have a fairly stout neck and be about $\frac{1}{2}$ in. to $\frac{5}{8}$ in. across the blade. The stronger tool used by pattern makers is the best for this class of work.

In cutting tracery great care must be taken to match the grain and to reverse the cutting direction at the least sign of danger. It is as well to bear in

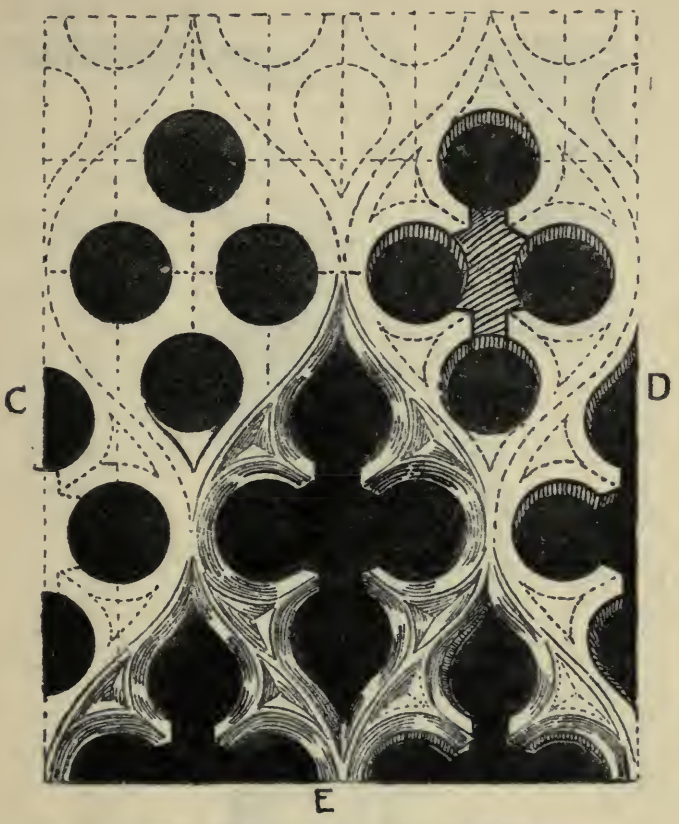


FIG. 85.—DETAIL OF TRACERY

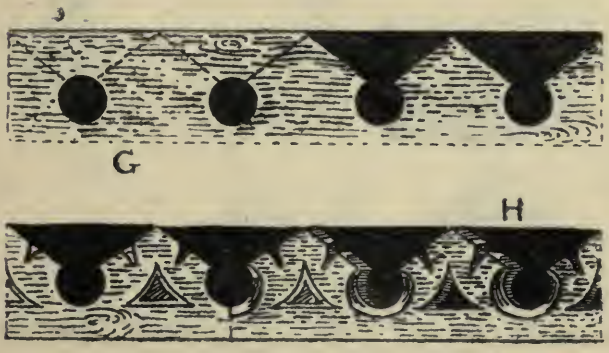
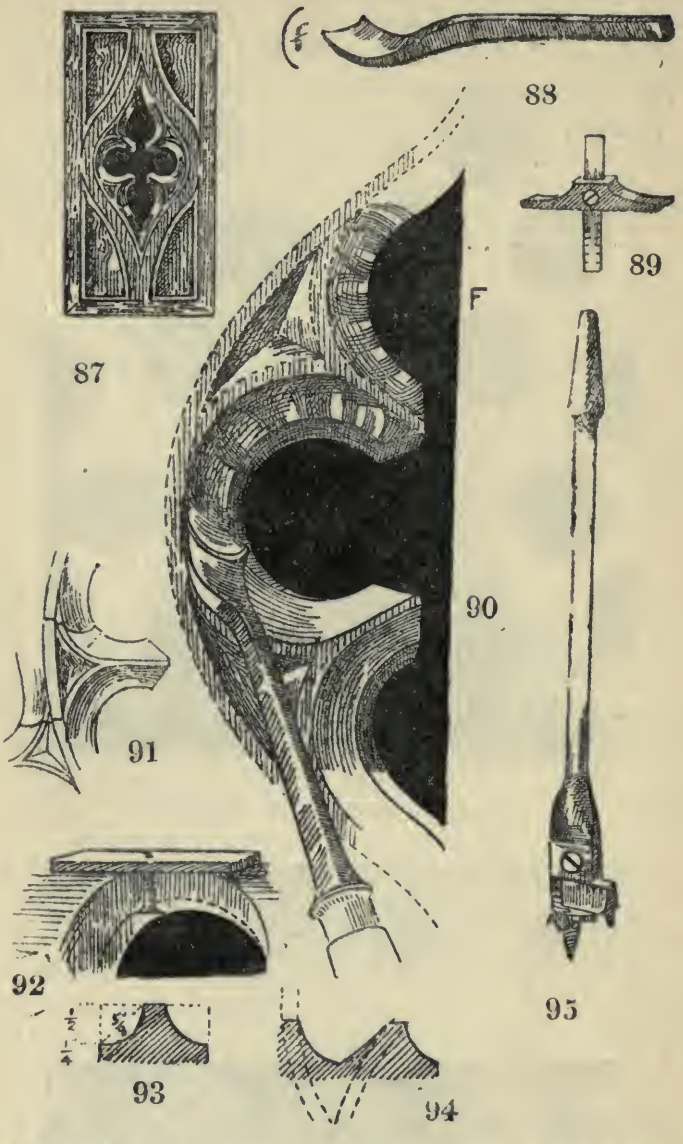


FIG. 86.—CAPPING FOR CUPBOARD



FIGS. 87 TO 95.—SHOWING VARIOUS DETAILS OF WORK, WITH SECTIONS, TOOLS, ETC.

mind that care and correctness are everything; for in this geometrical work faulty cutting shows up very plainly and cannot be rectified once the wood is cut away. A little gauge should be made as in Fig. 89, in order to test the depth of the cuts in the spandrels of the cusps. A section of these spandrels is shown in Fig. 94. A $\frac{1}{2}$ in. or $\frac{5}{8}$ in. hollow, as shown in Fig. 93, is suitable. The fillet or square edge should be about $\frac{1}{4}$ in. or $\frac{3}{16}$ in. wide.

The capping of this cupboard is drilled and cut on the same principle as that of the tracery (see Fig. 86, G and H, which should be sufficient to explain what is required). This capping is kept simple in the example, but it is possible to work it up and put more detail if required.

In Fig. 91 an example is given of the cutting when the cusps lie below the general surface of the panel. This is shown on the section. When carefully done this is an improvement, but it requires great care. Although tracery is often executed on a small scale, the work running very fine, it is not advisable to start with any but the bolder type, getting the hand in by degrees. There are many ways in which this typical English class of woodcarving could be used, and why it is so neglected in domestic furniture is hard to understand.

XIII.—APPLICATION OF CARVING TO FURNITURE

5.—THE CARVED CABRIOLE LEG

WE are all familiar with the cabriole leg, and in this country there are examples of its gradual development. It dates back to the time of the Egyptians and Assyrians. From that period it was carried on by the Greeks and Romans, but its use was abandoned during the Middle Ages, only to reappear during the time of the Renaissance. Were it not for the above facts its evolution in England could be shown as at Figs. 96 to 99, namely, in the club, the camel foot, the cabriole camel foot, and, finally, the cabriole ball and claw.

Although these legs or supports are often made without any carving whatever, occasions arise in which it is desirable to cut out and carve them in some particular style; 'cabriole' leg really means the leg of a goat. This form was often used by the French, hence its name. It has now become common to call all curved and carved leg shapes by that name, whatever form the claws may take.

In our example, Fig. 100, a type is taken that can be developed into any animal or other form desired in regard to the head and foot, e.g. the lion, panther, tiger, horse, etc. The wood chosen should be hard, of a close texture, and straight in grain. Care should be taken to procure it of sufficient thickness to allow for suitable and characteristic modelling, although good work can be done on thinner wood by means of lower relief. The shape of the whole leg should be marked out and the same pattern carefully used

for all the legs. All that can possibly be done with the saw (that is, the bow or band saw) should be seen to first. The pattern should then be traced out as in Fig. 104.

A fair sized V-tool should now be used to set it in and the cutting should be on the deep side for

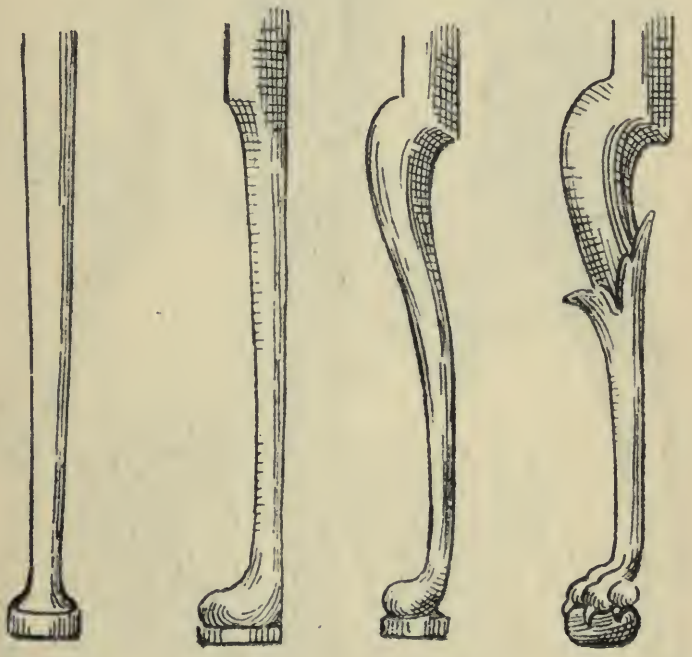


FIG. 96 CLUB FOOT | FIG. 97 CAMEL FOOT | FIG. 98 PLAIN CABRIOLE | FIG. 99 BALL AND CLAW

FOUR TYPES OF CABRIOLE LEGS

preference. The chest can be gradually cut to appear to have a more or less pointed appearance. The back, although rounded, should be thicker or broader than the line of the front; see section lines A, A, A, Fig. 104.

After the general form has been more or less shaped in, attention should be paid to the head,

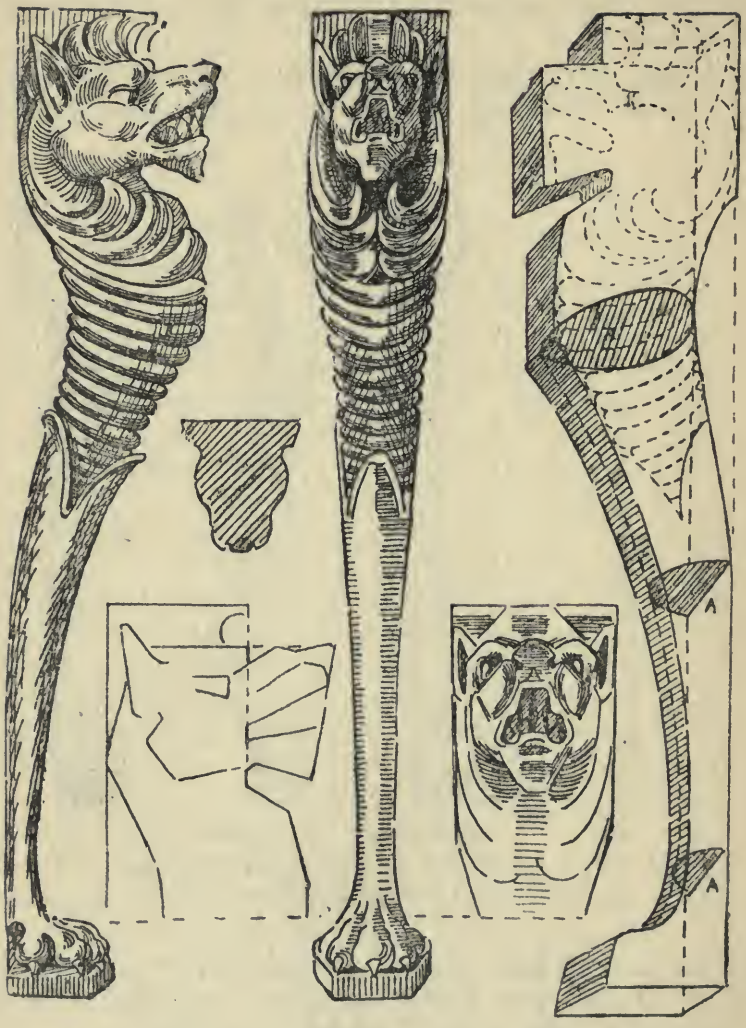


FIG. 100 SIDE VIEW | FIG. 101 OUTLINE OF HEAD | FIG. 102 FRONT VIEW | FIG. 103 HEAD (FRONT) | FIG. 104 ROUGH BLOCK

and from the very first an attempt should be made to set out the form as Fig. 105. As long as enough

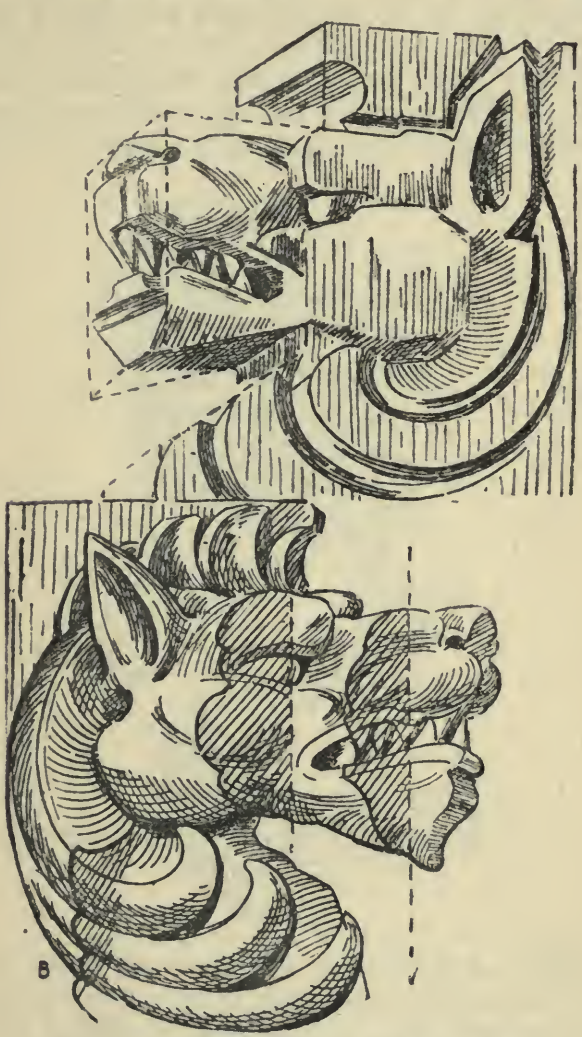


FIG. 105.—SETTING OUT FORM OF HEAD
FIG. 106.—HEAD PARTLY MODELLED (WITH SECTION LINES)

wood is left on there can be no fear of getting the modelling too square. It should be noticed that

the head is wedge-shaped in plan, as shown by inset at Fig. 100.

After using the V-tool, chisels and flat gouges are the best tools to use. The recess in front of the eye, the hollow of the ear, and the mouth, are the best parts to work on next. After these main features have been roughed out (see Figs. 103 and 105) the

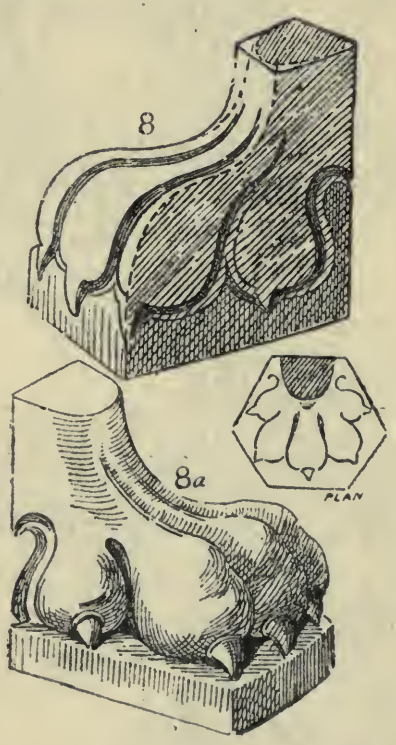


FIG. 107—TOE SET OUT

FIG. 108.—TOE MODELLED (WITH SKETCH PLAN)

foot or claw should be treated in the same manner, first with the V-tool and then squared out with broad square cuts (see Fig. 108.) The ring-like forms for the body and chest are cut with the V-tool and rounded with a flat gouge; afterwards the modelling of the head is finished off with gouges which will most nearly fit the contours suggested in the illustrations.

Fig. 103 shows what the front view of the head should look like when it has been squared and blocked out only. The rounding off must be very carefully done. Two vertical half sections are given in Fig. 106 as a guide. Note that the ears should not be separated too much from the wood at their tips, as they are liable to breakage. The long bold curves that flow

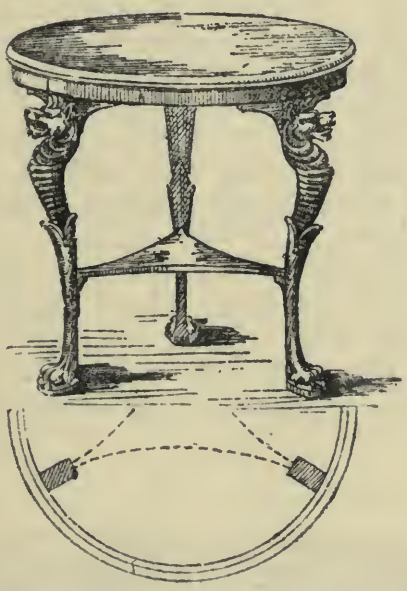


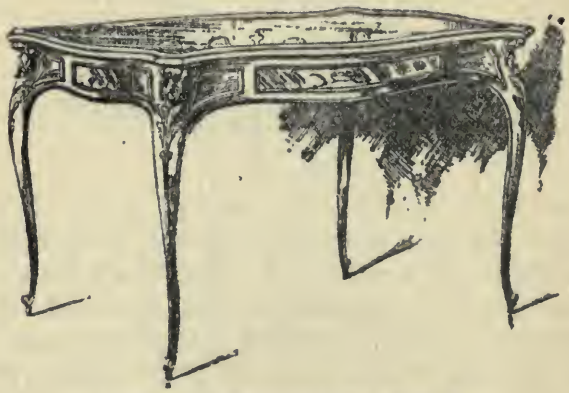
FIG. 109.—SKETCH OF CIRCULAR TABLE WITH THREE LEGS

from the back of the head to the front of the chest should be cut as clean and strong as possible; the simpler they are treated the better. (See section, Fig. 106, B.) The muscle forming the eyebrows should be strong and the eyeball sunk a fair distance to give the head a stronger expression. A weak treatment of the eye would spoil the whole. With regard to this example it is merely a type showing how such may be

cut out and carved. There are a great many good specimens of all kinds to be seen in our public buildings and museums.

The square treatment, Fig. 101, for first drawing the outline of the head is a useful method. Constant teaching and workshop practice teach one that we are all too prone to round everything over much too soon in our work, and it is as well to combat against this from the first. If the rings were left out and the chest and body only shaped according to the sections, the leg would probably look nearly as well and would be more suitable for some purposes.

At Fig. 109 are given a sketch and plan of a circular table with three cabriole legs such as we have described. No size is suggested as this depends on individual requirements. Of course we must always be guided by the usual height of tables or to whatever such legs may be applied. There should always be a tendency to the bold size, as it is much better to err here than on the small side. The scope of this sort of carving is very wide, and it is useful to obtain proficiency in it.



DESIGN FOR LOUIS XV TABLE

XIV.—CONVENTIONAL LION AND GALLIC COCK

APPLIED TO SPANDRELS

WHEN carving was in its primitive stages, and when the impressions made upon the minds of men by the objects around them (the events of the day, etc.) were portrayed in carved wood, much use was made of symbols or signs intending to depict the character or personality of individuals or nations. This work was mostly of an heraldic nature. Old as it is, dating back to prehistoric ages, it is still made use of at the present day, not only in coats of arms, trade signs, and symbols of friendly societies, etc., but also in modern cartoons, such, for example, as the British Lion, the Gallic Cock, the Russian Bear, and the German Eagle. Some countries have several symbols or attributes depicting the race. We ourselves have Britannia, John Bull, the Bulldog, the Lion, and the Rose, Thistle, and Shamrock.

One particular advantage is that such symbols will practically fit in with all styles and periods, the use of heraldic and symbolic forms being continuous.

Now one of the most common and useful spaces to decorate with woodcarving is the spandrel. This is partly formed by the depressed or low arch, and can be made use of in many ways. Spandrels of this kind are seen in overmantels, fireplace casings, sideboards, cupboards, etc. The scale of the present examples obviously depends upon the uses to which the carving is going to be put; but, whether small or large, the procedure would be the same. A careful

tracing should be made, and after this has been transferred to the wood the outline should be set in with great care, the flat gouges coming in useful. On no account should the edges of the gouges used overlap

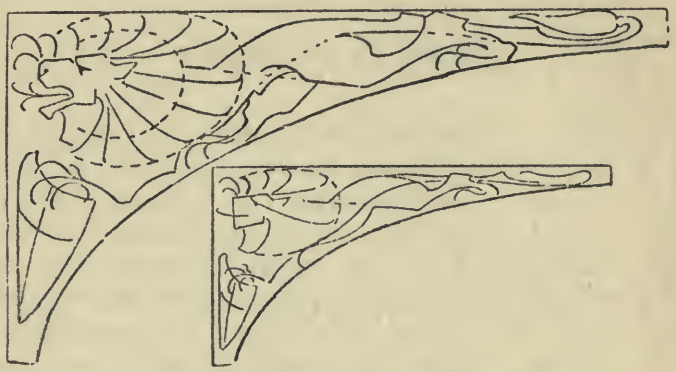


FIG. 110.—SETTING OUT THE LION

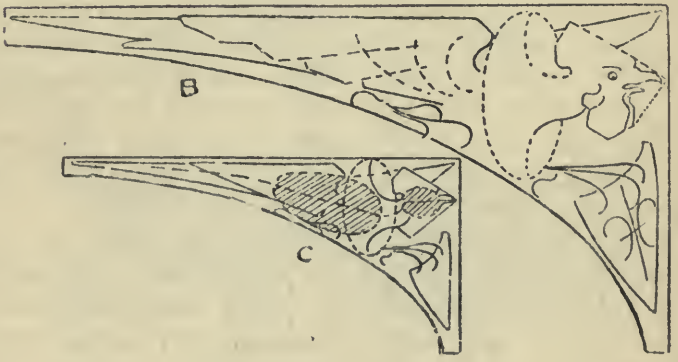


FIG. 111.—SETTING OUT THE GALLIC COCK

the line so as to cut into the body of the lion, etc. The modelling being in low relief, it would be difficult to get rid of marks left by false or over cuts.

It is well to think out all of this class of work in planes. For example, the highest plane or surface

in the lion spandrel (Fig. 112) is the head or skull; the hair or mane comes next, and is first set out as in Fig. 114, in somewhat elliptical form. The general appearance of our first stage or cutting would be that as might obtain from fretting the outline of the whole in $\frac{3}{16}$ in. thickness of wood, and then adding upon that the head and mane in layers of $\frac{1}{8}$ in. (supposing this to have been done by means of the tools and in the proper way with solid wood). We have then got over the first part. The ground should be fairly flat and cleaned up nicely, so as to bring the figure up sharp against it.

A medium sized and a small flat gouge are now used to pare off the square edges of the outline in order to form out the modelling. Unless a fair amount of anatomical knowledge is possessed by the carver it is best to keep the spandrel flat in treatment, making use of very little surface modelling. A reference to the section and modelling of the head in the last chapter will give some idea of what this modelling should be. Here, however, it is to be suggested only, and the head is seen in side view. The mane, or hair, is cut in spike-like masses; the V-tool will come in useful for this, and the lines or cuts of direction should radiate from around the ear. As much as possible should be made of the bristling appearance of the mane of the lion and the ruff of the Gallic cock, so as to make it a symbol of these warlike times.

As in all this class of work, certain parts of the detail are exaggerated to emphasise the fighting qualities—the hawk-like talons, claws, etc. Any readers who reside near or in towns of any size can easily note the general modelling of the body of the lion, there is such an extensive use made of it in nearly all public places for monumental purposes, whilst the lord of the chicken run is a familiar form to all of us. The body of the lion should be kept

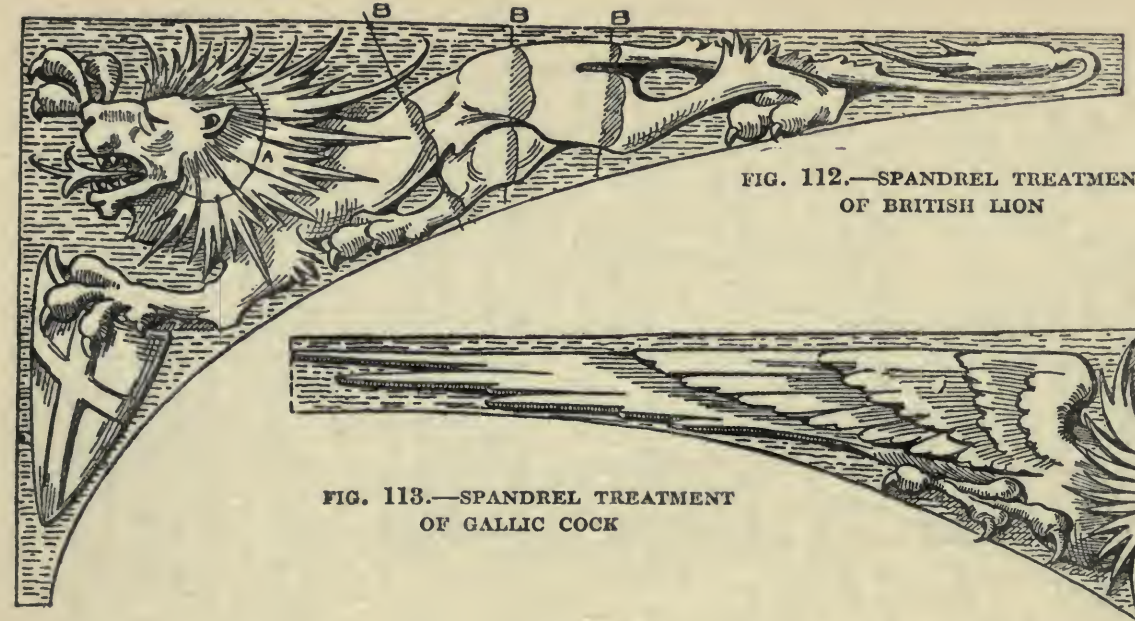


FIG. 112.—SPANDREL TREATMENT OF BRITISH LION

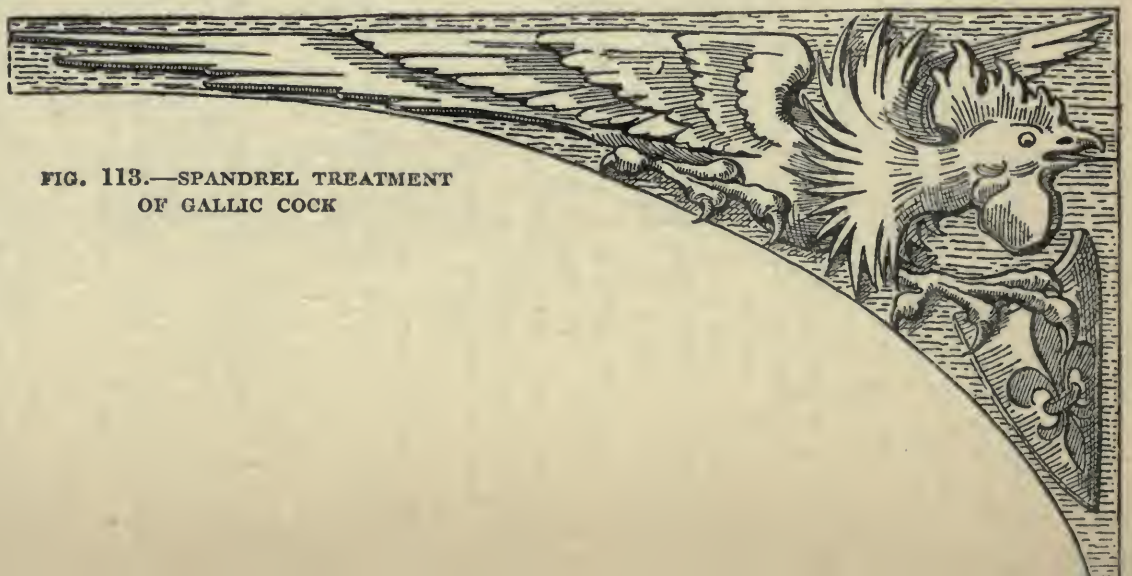


FIG. 113.—SPANDREL TREATMENT OF GALLIC COCK

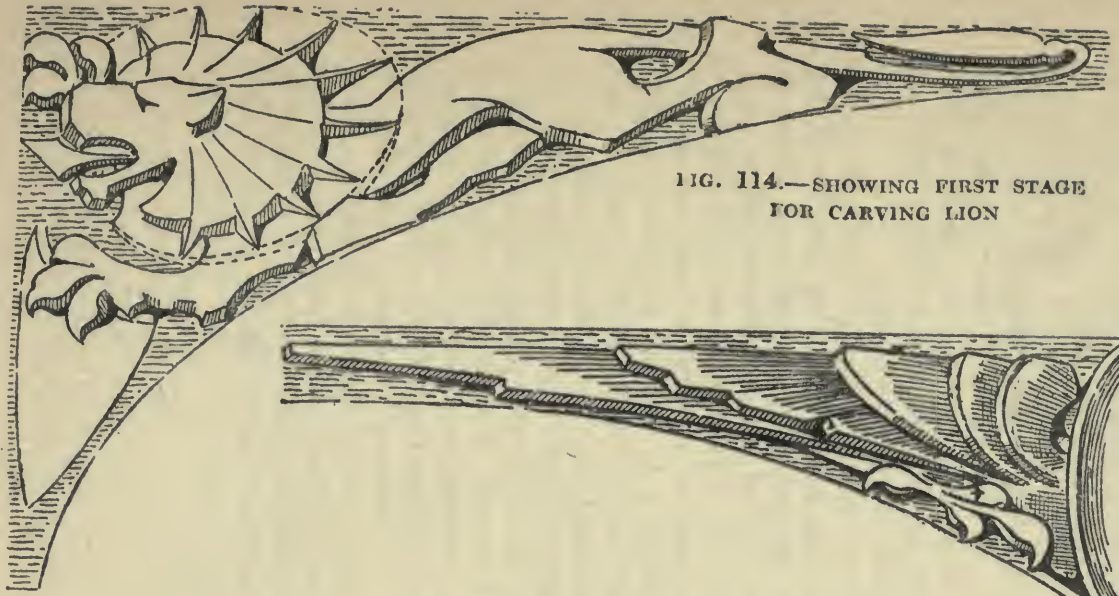


FIG. 114.—SHOWING FIRST STAGE FOR CARVING LION

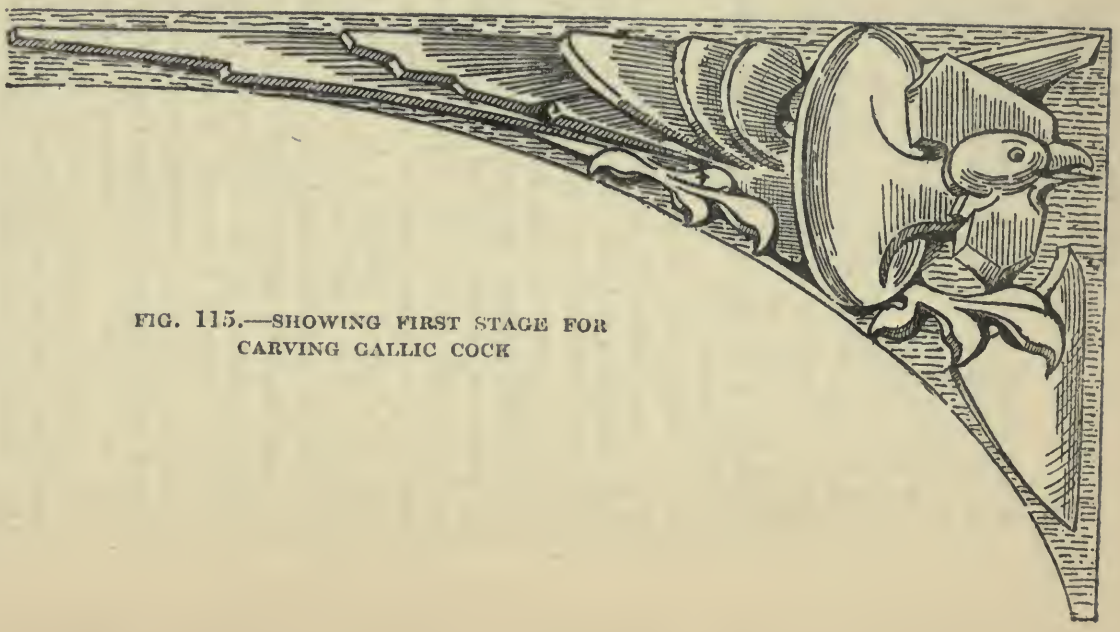


FIG. 115.—SHOWING FIRST STAGE FOR CARVING GALLIC COCK

as long and narrow as possible, as in the illustration, being (from an heraldic point of view) correct in this attitude.

With regard to the shield at the base of spandrel, only a simple device is shown upon it. The Red Cross is that of the British, and the *Fleur-de-lis* is that of France. In the smaller illustration, Fig. 111, B and C, giving the setting out of the Gallic cock the body and head shown in the elliptical form should afford some idea of the slightly raised modelling. No section lines have been given, as the first stage drawings, showing square cutting (Figs. 114 and 115) should give all that is necessary.

On the drawing of the lion emblem a few section lines are given on Fig. 112, A showing the V cutting, and B B B giving the modelling of parts of the body. The device on the shields can be either slightly sunk, or it may be raised. To those who can draw and have also a little knowledge of design, it should not be a matter of great difficulty to acquire the power to alter such forms as these to suit the different shaped spandrels that are commonly in use. The question as to the amount of relief required in these spandrels can only be answered by a consideration of the position it is to occupy, and also the thickness of the wood available. If the spandrel is surrounded by strongly raised mouldings or other members so that the carving would be in a recessed position, the cutting should in this case be deeper and the modelling bolder than that set out in the illustration, in order to obtain the necessary definition of the pattern. This is an important point, and attention should be paid to it before commencing to cut.

XV.—NATURAL FORMS

I.—CARVING A BIRD AND FOLIAGE PANEL

SO far the examples illustrated have dealt chiefly with the practice of woodcarving on more or less of a conventional basis. It will thus be a change to deal with designs of naturalistic form, conventionalising to a much less degree and that only in the arrangement of the leading lines. We will therefore (in this and the two following chapters) take a series of panels of a generally useful size that could be used for fire-screens, sideboard or cupboard doors, etc., say about 22 in. high by 10 in. wide and from ¾ in. to 1 in. thick, woods such as satin walnut, dark walnut, or close-grained oak, being suitable.

The examples will go under either of the groups: earth, sky and sea; fish, flesh and fowl. This offers a wide scope of treatment, and as decoration for home furniture such panels should be singularly appropriate.

The panel illustrated is that of two birds representing pheasants. This would do for sky or air owing to their flight, or for a panel representing game or fowl.

THE BIRDS.—Before commencing this panel it is as well to bear in mind what was mentioned previously about sinking the ground deeper towards the centre of panel, so as to throw up the principal objects—in this case the two birds. Great care will have to be taken to get the drawing correct as the contour is subtle. It would be best to set in the upper bird first; much depends upon how this comes out, it being the principal part. Cut in fairly deep, as some parts such as the legs and neck will have to fall back

FIG. 113.—CARVED PANEL, 22 IN. BY 10 IN., WITH PHEASANTS AND OAK FOLIAGE

behind the general plane so as to appear to be in the centre of the body. Fig. 117 will give some idea of the first cutting of this bird. The parts marked A, B, C, are in three different planes, one below the other, and should have the first attention. See also at D, where the neck falls in a lower plane.

In cutting away around the body, etc., the slope of the part cut away should not be abrupt, but like Fig. 118, E, E. When this has been done in a satisfactory manner the edges can be rounded off, and the body modelled in the manner shown in the sections, it always being borne in mind that the body and head are oval or egg-shaped in general form. (See Fig. 119). The general relief is that of half an egg. After the moulding has been executed the position of the main wing and tail feathers can be put in. By means of the parting or V-tool the principles of radiation should be taken full advantage of, especially in the wing and at the base of the tail.

The breast and lower part of the body have an imbricated treatment in the feathering, which is shown in the lower part of the neck in Fig. 120. This is obtained by means of a gouge that follows the curves as nearly as possible, the tool being pressed down to a slight depth in the order of arrangement. Afterwards some of the wood is pared from the top or outer edge, backwards, towards the base of the curved cut behind. (See Fig. 120.) There are some feathers about the neck, but below the band (F, Fig. 121) that are represented in a more pointed manner, and with a flatter gouge, but the process here is the same. The neckband F is represented in the living specimen by white feathers, and the contrast is best indicated in woodcarving by a rather plain or smooth surface. In matters of this kind and in relation to all the detail it would, of course, be a great advantage to be able to examine a real bird, as then the spirit

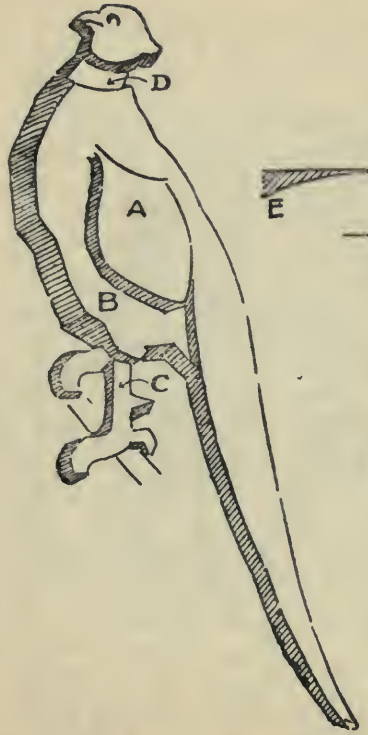


FIG. 117.—FIRST CUTTING OF BIRD

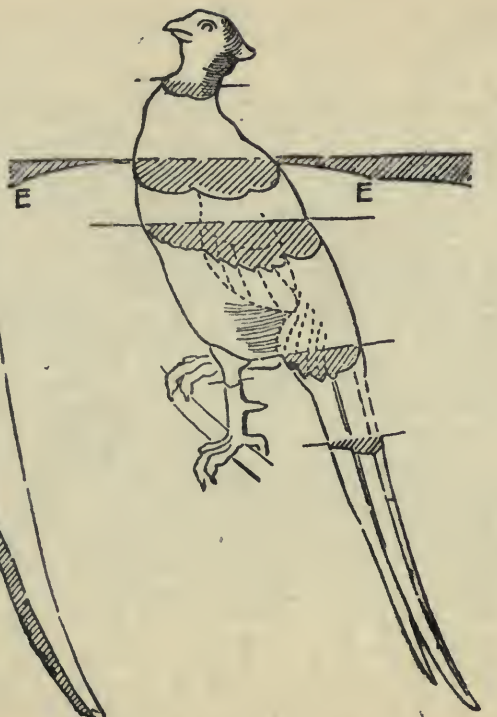


FIG. 118.—SECTIONS

FIG. 119.—OUTLINE

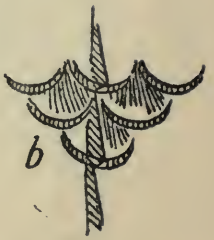


FIG. 120.—DETAILS

FIG 121.—ENLARGED SKETCH OF HEAD OF PHEASANT

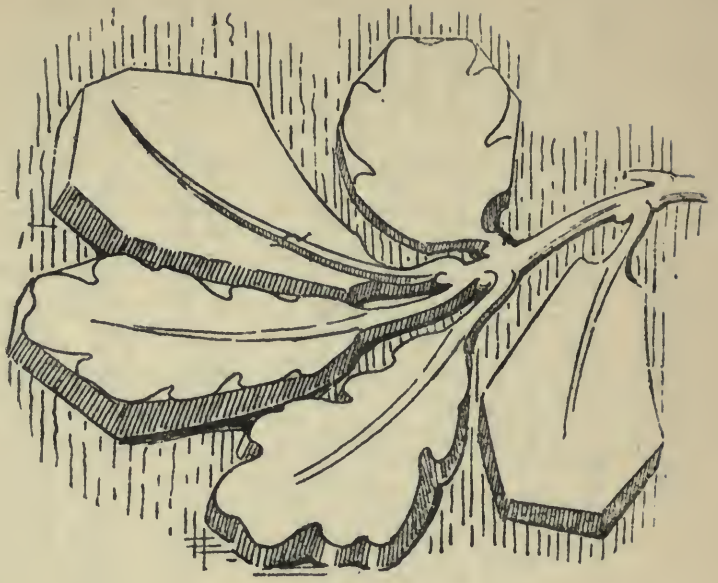


FIG. 122.—SHOWING METHOD OF BLOCKING-OUT A GROUP OF LEAVES

of the treatment could be more easily followed. This sort of work could be made very rich by means of working up the feathers in their right direction by means of small and shallow surface cuts.

The head wants careful cutting, but the illustration at Fig. 121 should give a good lead if the shading is carefully read. The head of the hen bird in the lower part of the panel should be kept in fairly bold relief, with the branches sunk in behind. The treatment of the body of this bird should be kept quieter than the upper one.

THE OAK FOLIAGE.—The oak leaves and stem should be carved last of all; their treatment is shown in Fig. 122.

Similar blocking out and finishing are carried out over the whole of the foliage. There is room for a lot of feeling and variety in these leaves, and the alteration of planes can be effected as the work goes along.

As a general rule it is usual to keep one edge of a leaf raised. The edge of the leaf next to it is kept down. A direct copy of any illustration is not necessary or even desirable. Individual fancy, when combined with intelligence and knowledge of nature, gives the requisite spirit or feeling. This is everything in successful work. Oak leaves have a tendency to angular growth as regards their setting out in leaf stalks and branches, and this must not be forgotten.

The background of this panel can be cleaned up and left plain, or it may be rough with a broken appearance. A woolly effect is avoided by using sharp tools and clean cuts.

It has been unnecessary in the last few chapters to say much about tools. New ones of different shape and size should be obtained as the necessity appears to arise, and this can only be felt by a carver himself. Some work with fewer tools than others, but a good variety is increasingly useful as progress is made.

XVI.—NATURAL FORMS

2.—CARVING A FISH PANEL

THIS exercise in the series of three with which we are now treating relates to fish and water (Fig. 123), and is more conventional in its arrangement than the panel of pheasants and oak leaves, with which we have just dealt. The reason for this is that the subject lends itself more readily to a pleasing arrangement (see Fig. 127) in the setting out. The panel is supposed to be the same size as before, 22 in. by 10 in. by $\frac{3}{4}$ in., and should be executed in walnut.

When the design has been satisfactorily transferred to the wood, and the interlacing, or passing over and under, of certain parts duly noted, commence cutting by setting in and working the ground away from around the two principal fish forms in the lower half of the panel. The ground should be removed until it leaves a hollow, as shown in section at Fig. 124, A A. This should be done with both of the chief fish forms, and the cuts should be deep so as to give these two principal features their necessary prominence.

THE FISH.—The first modelling of the fish is shown in section and detail in Fig. 124. A section across the head is also given at B B. For a section across the mouth see C C, Fig. 125.

The carving of this panel would look well if the cutting away of the ground was deeper in the centre, as mentioned before in relation to similar panels. The saucer-like section should be kept in mind, and sufficient wood left on the hollowed ground to allow of a series of long, bold, sweeping cuts, suggested in the direction of the lines in Fig. 123. This should be

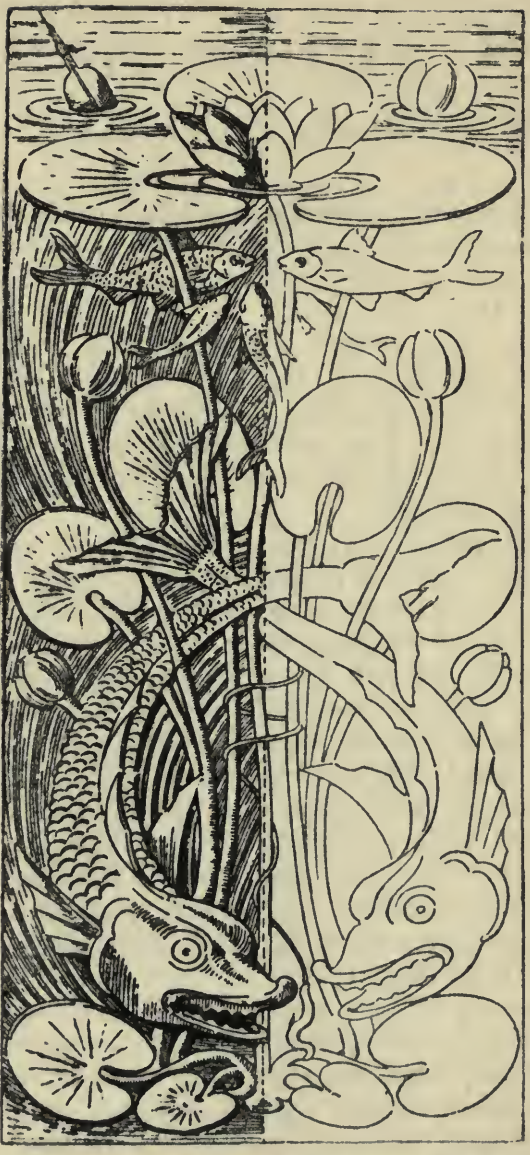


FIG. 123.—CARVED PANEL, 22 IN. BY 10 IN., REPRESENTING FISH AND WATER

made a marked feature in the carving of the panel, a section of what is intended being shown in Fig. 125, D D. The hollow cuts fit in well with the flow of the design, and also suggest disturbed water. It would, in fact, form an admirable background if carefully executed. If a V or parting tool is run fairly deep on either side of the leaf and flower stalks, these curved and sweeping lines will come out clear and free at the end of the cuts.

Work the ground out well from around the head and cut in the hollow of the mouth deep. By keeping this bold and strong, and slightly diminishing the relief as the tail is approached, a suggestion of perspective and movement is given. (Fig. 124, E E.) For a section of the eye see Fig. 125, F. The stalks of the leaves and flowers are shown circular in the illustration, but they would probably look well if cut on an octagonal section. It is a matter of choice, but as the leaves are of a rounded form this would cause a pleasing contrast. The broad ribbing or serrations in the fins and tails of the fish should be cut up with a sharp and clean edge so as to get the required character.

The scales are of great importance, and should be set out carefully as regards the imbrication; indeed, with as much care as if we were going to execute geometrical chip carving, in which this class of pattern is familiar. There is, however, this difference: the scales should become smaller as the tail is approached, as in nature. This, of course, adds to the difficulty in the present example, and it will be necessary to use several gouges of different sizes.

The shading of the scales in Fig. 125 is given to explain the modelling, which has to be executed on a curved surface. Should it be felt that the correct rendering of the scales, as illustrated, is too difficult, a good effect can be obtained by just indicating them

by shallow cuts at regular intervals upon the surface of the fish, or the outline of curve only can be incised. Whichever method is used, care must be taken not

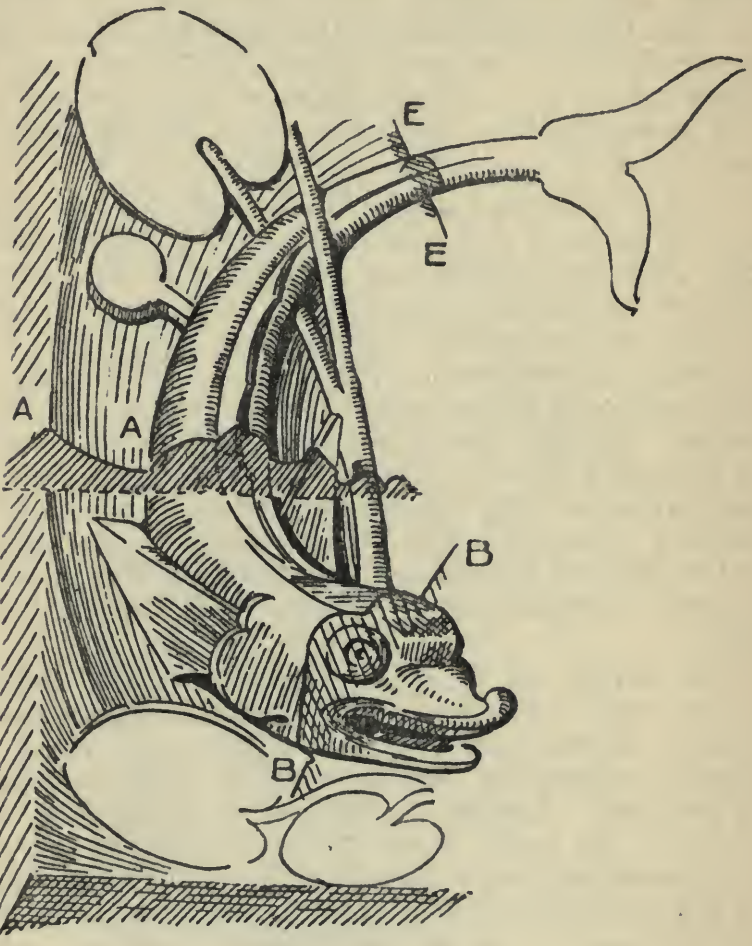


FIG. 124.—FIRST MODELLING OF LARGE FISH

to cut too deep or to break up the general contour or form of the body of the fish. This is not an easy panel, but it is one in which there are many possi-

bilities for individual expression and character, there being room for a sense of freedom and enjoyment in the cutting.

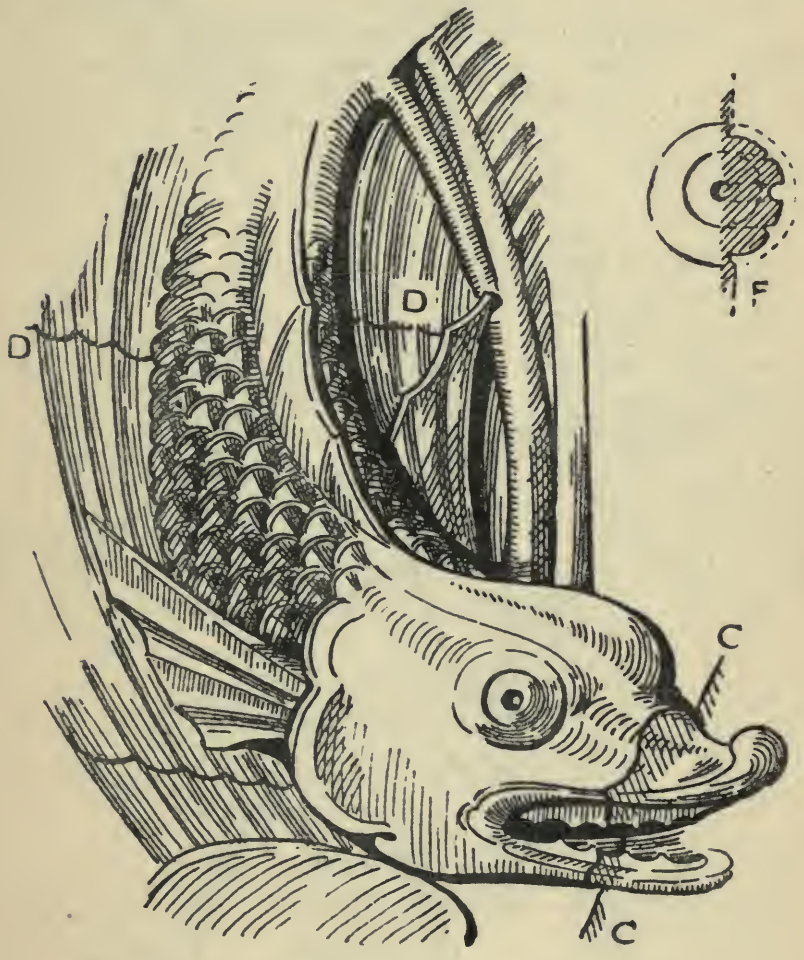


FIG. 125.—DETAIL OF HEAD AND BODY OF FISH

THE LEAVES, ETC.—Some vertical and rectangular sections are given (Fig. 126) of the upper part of the panel treating of the leaves, flower, and buds. The

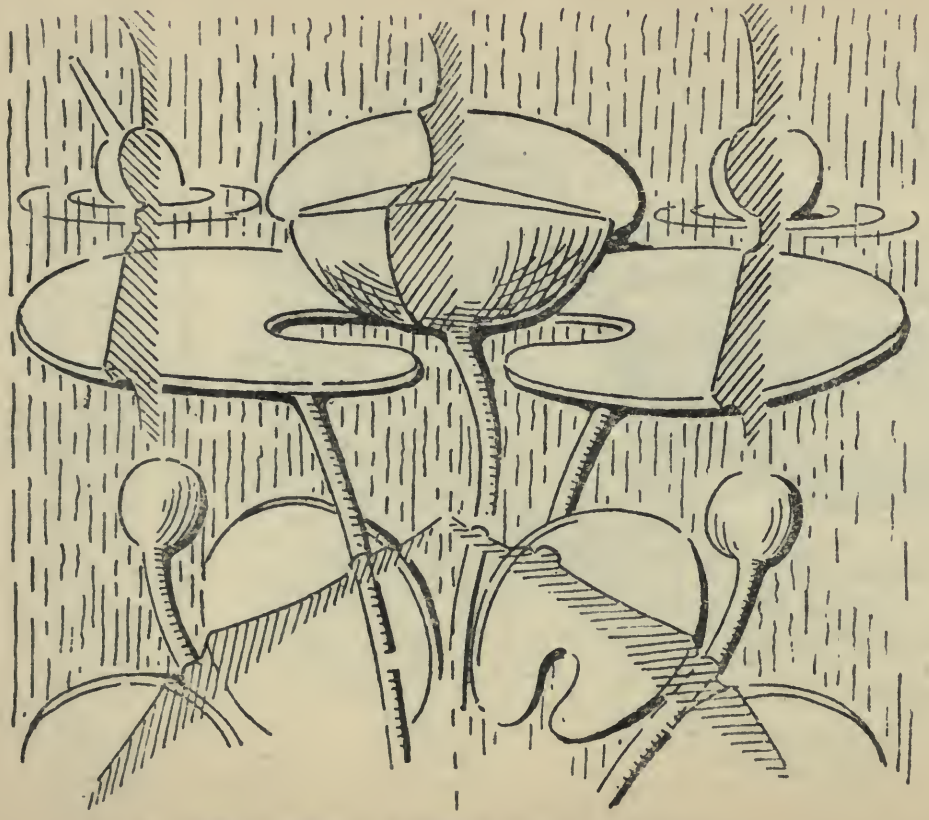


FIG. 126.—DETAIL OF UPPER PART OF PANEL

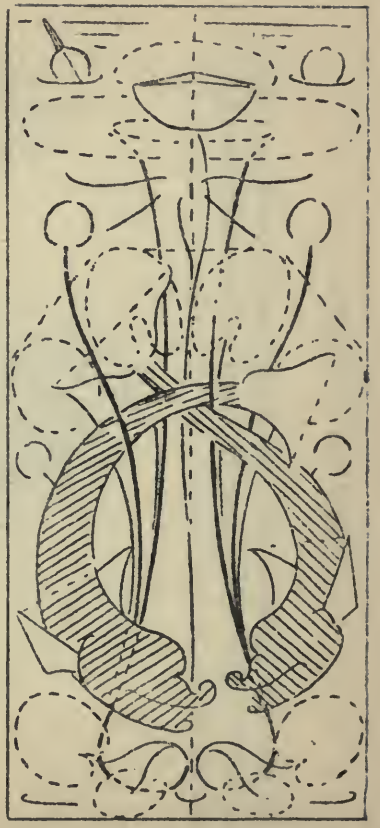


FIG. 127.—LINE ARRANGEMENT

background is shown flat in this sketch so as not to confuse the sections. The different values of the depth, modelling and light and shade could, of course, have been more fully shown, but in woodcarving all these values should be felt as the work proceeds.

For instance, take the water-lily flower in the upper part of panel, where only a sketch is shown, and a simple section. Now, nearly every one has a general idea of the shape of this flower and could make a rough sketch model of it in clay. Thus cut it according to your knowledge in medium relief. A carver should always think of his work in relation to its section. If the student is not quite sure of the general form and section of a fish of the common type, take the first opportunity of studying one, as it lies on the nearest fishmonger's slab, or, better still, from life in the glass globes used for that purpose or in the public parks and gardens.

If it is desired to carve this panel on a smaller scale than that of the dimensions given, some of the detail should be omitted, such as the group of small fishes at the upper part and the two smaller side buds.

XVII.—NATURAL FORMS

3.—CARVING A HARE AND SQUIRREL PANEL

IN this design the subject of animals is dealt with, and, as the introduction of an animal larger in scale than the hare would not allow of a treatment that would harmonise with the panels illustrated in the two preceding chapters, we are limited to the size of some such animal. It is, however, quite possible to make a pleasing design within these conditions, and in order to give the appearance of lightness and also to pair with the panel containing birds, a squirrel is introduced.

The foliage may be made to resemble the chestnut or some similar leaf at the choice of the carver. In the illustrations only the general containing lines are drawn.

A certain amount of knowledge of design can be acquired by taking note of the setting out of these and kindred panels. The present set is for an upright position, and thus the decorations or filling should appear to have more mass or weight at the lower part. It is necessary to bear this in mind in carving, and to cut out around the hares in such a manner so as to throw them up in fairly bold relief.

The hares are represented in what is known as their form or resting place. Thus a hollowing-out process around them would be in keeping with their surroundings, and the saucer-like hollow mentioned in former lessons should be started just inside the tree stem, passing behind the animals, and throwing them in relief with a fair amount of light and shade.

As regards the first setting in (or massing out) of the animals there are two methods, either of which

FIG. 128.—CARVED PANEL, 22 IN. BY 10 IN., REPRESENTING ANIMAL LIFE—HARE AND SQUIRREL

would do if executed with care: (1) with chisels or flat gouges, to be rounded afterwards (see Fig. 129 [2] in outline), or (2) with different gouges on the curved

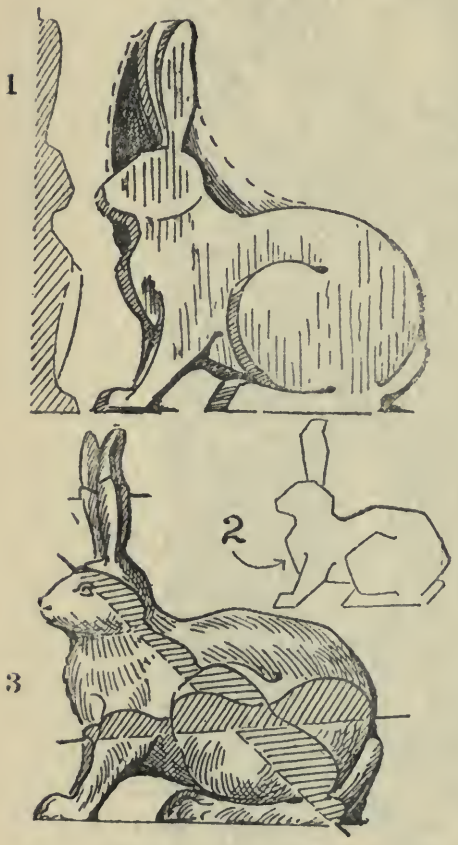


FIG. 129.—(1) HARE SET IN; (2) OUTLINE; (3) SECOND STAGE

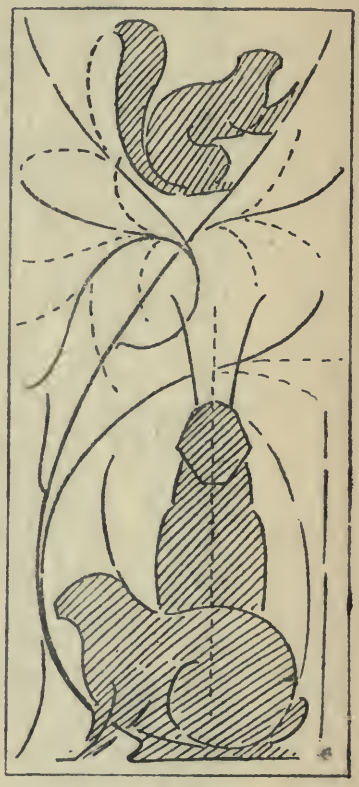


FIG. 130.—LINE SCHEME OF PANEL

principle. The latter is perhaps the easier method (see Fig. 129 [1]), but the straight-lined outline allows of more true and suggestive drawing and cutting.

In both cases the first cuts must be well on the outside of the outline to allow for the usual cleaning up. The ears of the hare are smooth, but the lower part of the outline, such as the chest, etc., should be

FIG. 131.—SQUIRREL SET IN

FIG. 132.—SHOWING LINES ON SQUIRREL

broken up to suggest fur, and it is the successful use of the V-tool on the surface of the body and limbs that makes the animal a success. If cut in with care, the direction of these cuts must be that of the natural way of the fur, and if correct this will help to suggest

FIG. 133.—HARE WITH EARS LOWERED

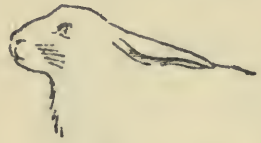
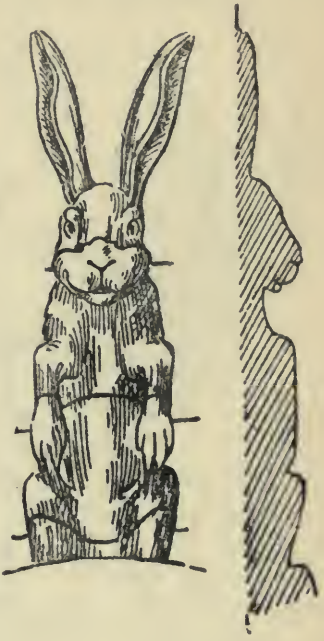


FIG. 134.—HARE, WITH SECTIONS



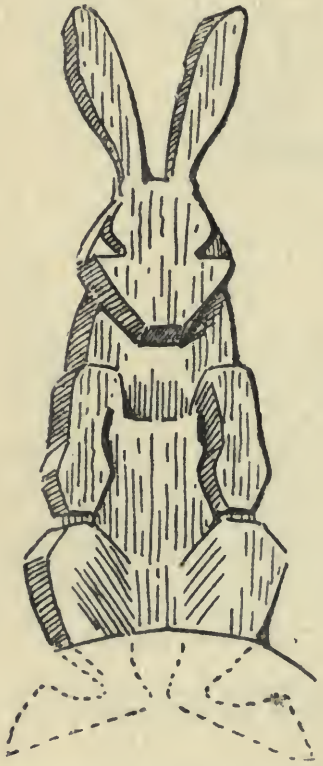


FIG. 135.—HARE BLOCKED OUT

FIG. 136.—HALF-OVAL TREATMENT

DETAILS OF HARE AND SQUIRREL

the contour of the limbs. The few lines shown in the drawings should assist the worker, but the success of this exercise depends upon the knowledge by observation acquired by the carver. The cuts representing this fur should not be executed on too fine or small a scale. In the suggestion of lines shown on the squirrel (Fig. 132) there is sufficient for the purpose. In carving the tail of this animal it would be as well to treat it just a little decoratively, letting the V or parting cuts follow the general outline in slight radiation and in long sweeping cuts. The ears are also cut up into feather-like tufts.

A good plan would be to treat the fur in tufts or masses somewhat after the shading lines, leaving the other parts practically smooth. The drawings are those of general outline only, so that it is as well to remember this and to break the edges, thus suggesting hair at the finishing off. Hares have longer ears and hind legs than wild rabbits. The position chosen for the two in the panel is that common to hares when alert. If preferable, the ears of the nearer animal can be depressed as in Fig. 133. The erect hare will be the most troublesome to carve, being full faced, there being some difficulty in getting sufficient relief to model it properly. A section is given of both hares which should be of assistance. The illustrations of the blocking out are given as usual; also the contour is shown on the drawings by means of sectional lines. (Figs. 129 [3], 132, and 134.)

To observe how the fur lies on the body of a tame rabbit would be of assistance to the student, as it is so like a hare in general form. In the modelling of the feet and head, however, remember that the hare is thinner and shows more bone.

To those who find it easier, the heads of these animals can be cut first on the half-oval method, treating the body in the same way (see Fig. 136), the details being seen to later.

XVIII.—THE CARVING OF AMORINO HEADS ON BRACKETS

THE pediments, entablatures, etc., of the Tudor and early Renaissance periods were often decorated by the introduction of angel and amorino brackets; that is, the consoles or supporting billets were decorated by the introduction of the head and shoulders of human figures, mostly with wings. These were used to add decorative value to the building.

A proper and careful study of this element brings us to a very interesting branch of woodcarving, but one that needs careful study and handling. A certain knowledge of anatomy is very useful, in so far as its influence on outward form is concerned. Of course we are unable to treat of that here, except to call attention to the general shape of the skull of a young child, and to compare the same with that of an adult. (See Fig. 137.) This at least is very important. As the illustrations in this chapter treat of the heads of amorini only, attention is especially called to the facial angle in the typical head of an infant. The slope is more or less in the opposite direction to that of an adult; in fact, the forehead and the whole of the upper part of the skull are much more pronounced. As age proceeds the face enlarges out of all proportion to the rest of the skull. There are, of course, exceptions, but it should be remembered that it is easier to suggest youth by general form in woodcarving than by means of soft outline and expression.

In wood it is better to make use of the bold masses that Nature gives us; consequently enlarge the upper part of the head, and keep the face small as in our

examples. A model method of starting this work would be to block out in clay the general shape of a child's head in the position required, and cut this out in successive stages as a preliminary study to working in the wood. Repairs and correction can be made in the clay which are impossible in the wood. There is no need to work the clay model up to a high finish; it will have answered its purpose when it has given us some idea of how to start.

A pleasing child's head can always be carved (care being taken) if these few simple rules are followed: 1st, that the general shape of the skull is of the most importance; 2nd, that the face should be kept comparatively small; 3rd, that the lips should suggest their first use, the age of suckling (see Fig. 137 [5]); 4th, that all the features are well rounded and plump. Figs. 137 (6 and 7) are views of a head in high relief, and sketches of several stages in their development are given in Nos. 8, 9, and 10 of the same illustration. The wings can be used in almost any position required, providing they look as if they are properly attached to the top of the shoulder.

In No. 11 we have an example of a head in lower relief, the gradual development of which is suggested in Nos. 12 and 13; note again the proportions of the head and the bulging forehead. Mental notes should be taken from Nature as the chance occurs as to the proper treatment and flow of the lines of the hair. This should be treated as boldly as possible. The general masses can be cut up in parts with the V-tool or the smaller gouges. It is impossible, however, to give exact instructions on a matter of this kind; each must do his best to suggest all that he thinks most charming in the general proportions and expression.

A note of warning is needed as regards other detail. Do not cut the wings up too much or suggest numer-

FIG. 137 (SEE ALSO OPPOSITE)
EXAMPLES OF AMORINO CARVED BRACKETS, WITH DETAILS

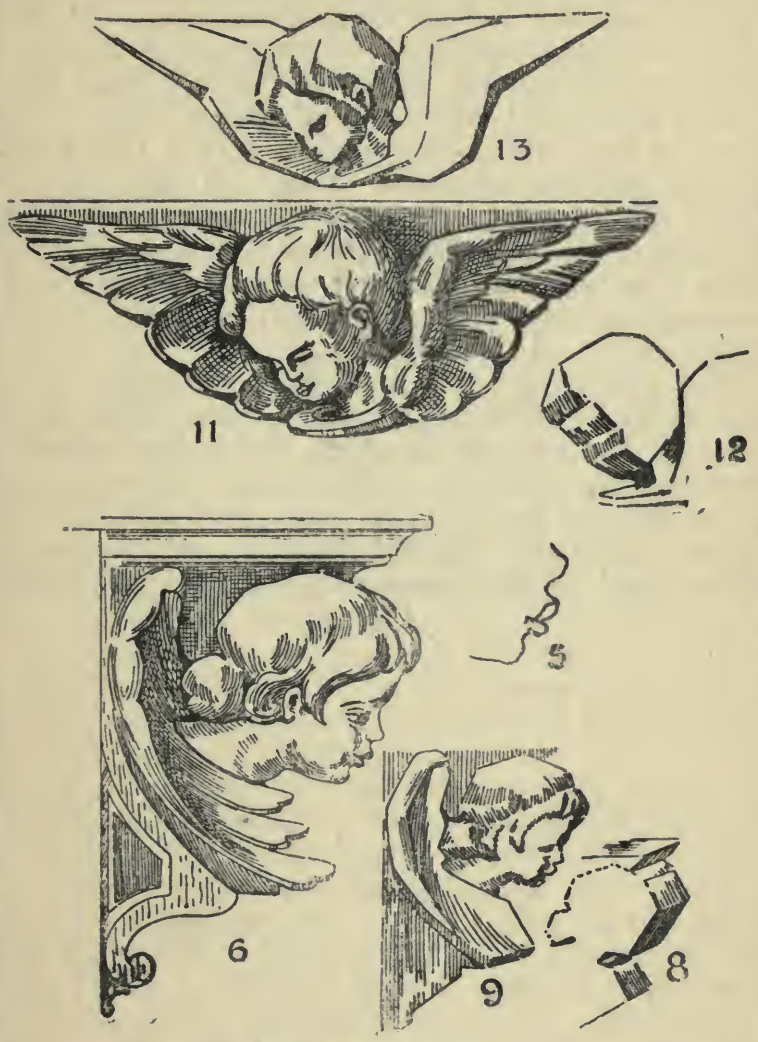


FIG. 137 (*continued*)
EXAMPLES OF AMORINO CARVED BRACKETS, WITH DETAILS

ous features. This makes the work look fussy. The same rule relates to the hair, the most difficult part of all being able to tell when to leave off. In workshops we have found it useful to have a medium sized model of the general masses of a child's head (block model of the skull, etc.) made in plaster. This we have been in the habit of imbedding with a slab of clay in the position required; it can be pressed in for lower relief or vice versa. Fig. 137 (11) was worked in this way. For full relief the wood should not be less than 8 in. square. They are often required cut to a smaller scale, but it is not good for beginners to do this.

The general use of the amorino and angel bracket can be seen in the supporting corbels of the timber roofs in our ancient churches, and in the cornice of rood screens, pulpits, etc., of the Tudor periods. They can also be found in many examples of Elizabethan furniture, and the extensive use of the grotesque head of the Renaissance period is well known.

XIX.—CARVING GROTESQUE HEADS AND MASKS

THE examples which dealt of amorinos and angel brackets are followed in this chapter by the treatment of the grotesque head or mask. The application of heads and masks was so often used in past times for purposes of decoration that it is almost a necessity for woodcarvers to have some general knowledge of how to get about the carving of these. The heads and faces chosen here are governed by the same principle as the angel heads already treated. It should be noted, however, that, for the purposes of woodcarving, the broad principles of form and expression only should be used. The more subtle expressions that can be shown in modelled and smoothly-rounded form in clay, wax, or marble, are not so suitable for treatment in wood. No doubt such modelling is frequently done in a satisfactory manner, but the fact remains that the labour spent in working out such expressions in wood is not only difficult, but is really unsuitable for the material.

To carve a head or mask such as that shown in Fig. 138 it is desirable to make some partial study of the bones of the skull. Upon these bone forms only the most important muscles should be shown in the carving—forms that are decided and easily read. Note the hollow of the eyes, the treatment of the cheek bones, the frontal bone of forehead, the nasal eminence, and the general lines of the jaw. Exaggeration is the chief characteristic of grotesque forms. For example, if it is required to represent amusement or laughter, the expansion of the mouth should be large—practically from ear to ear—and the eyes

contracted and narrow. For fright, horror, or such-like expression, the eyes should be nearly circular, although they can be sunk under the brows. The expression of anger is indicated by contracted brows.

But the most satisfactory of grotesque heads are those which, while suggesting their human and animal origin, go beyond it into the fantastic. They are

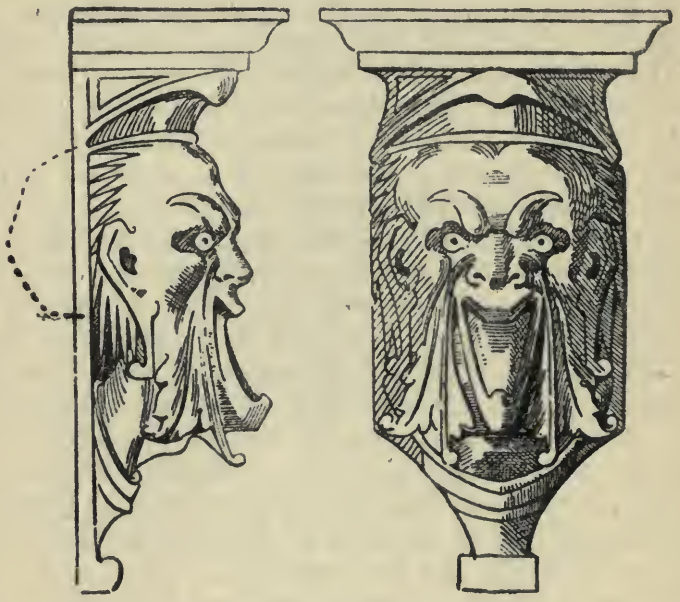


FIG. 138.—TYPE OF LONG, NARROW MASK, SHOWING SIDE AND FRONT VIEWS

then purely decorative and interesting. It is for this reason that the masks, etc., of the Renaissance period are so satisfactory. The hair, the beard, etc., take on a leaf-like treatment; the ears are sometimes out of all proportion and are treated like the wings of the bat; other features are also exaggerated.

During the Elizabethan period of architecture these masks were made much use of, and many fine

specimens can be found carved over fire-places, doorways, etc. They mostly take the place of a console or shallow bracket; if they are well carved they are a favourite to this day, and there is a wide demand for this class of work. No amount of description can give such a satisfactory insight into the treatment of these heads as would a proper study of a real skull or a cast.

These grotesque heads are cut in all sizes. A beginner in this class of work should not cut one out of a piece of wood less than 12 in. by 6 in. by 6 in.; larger

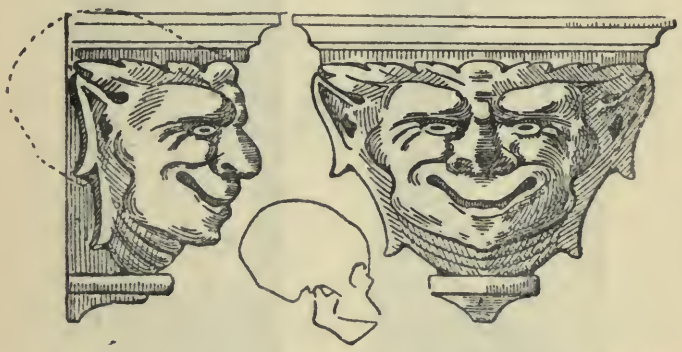


FIG. 139.—TYPE OF WIDE AND SHORT MASK; SIDE AND FRONT VIEWS, WITH SKETCH OF SKULL

would be better for good practice. Afterwards, when skill is obtained, carve to requirements. Such heads fall under two main divisions: the long and narrow, and the wide and short. (See Figs. 138 and 139.) In practice they represent consoles of those proportions.

In setting about the work, as illustrated, saw (or boldly cut) out the main divisions, as shown in section, Fig. 140 and 141; this is a block view, but do not cut away too close. Always, as we have remarked many times before, have enough wood left to give room for finishing cuts. A bench screw, as Fig. 142, should be added to the list of tools; this is inserted

into the back of the piece of wood to be carved as shown in Fig. 143. A bench screw is better than an ordinary vice for some work, as it is possible to move the wood to any angle of horizontal radiation, enabling

FIG. 140

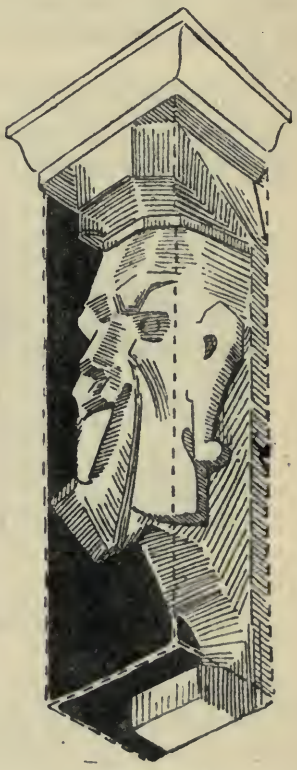


FIG. 141

SHOWING THE SECTIONAL BLOCK TREATMENT OF MASK AS FIG. 138

easy cutting on all sides, as well as on the front. Square cutting should be the rule, and this should be kept to as far as possible all through. Whatever rounded form is necessary should be pared off at the very last. The mouldings (if any) at the top and base

can be added afterwards with independent pieces of wood if required to leave more of the original wood for the carving of the head.

In setting out and cutting, leading types should be adhered to, so that a sound method is acquired. In Fig. 139 a Negroid form is taken, as the general outline of the skull shows. By placing human faces, grotesquely treated, upon the outline of the skull formation of the animal world, suggestions can be

FIG. 142.—BENCH SCREW

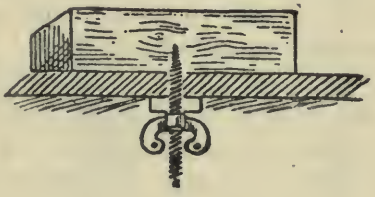


FIG. 143.—HOW THE BENCH SCREW IS USED

made representing the different virtues and vices which these creatures are supposed to symbolise, and it is possible to make one's work extremely interesting when the designs are carefully thought out and applied.

Little has been said as to cutting, as by a careful reading of the preceding chapters sufficient can be gathered to carry out the tool work. Oak or walnut or any other close-grained wood can be used for the purpose of carving these grotesque heads.

XX.—CARVING GROTESQUES: THE GRIFFIN

IN the carving of grotesques one or two forms are in common use, derived as they are from the antique. In early times they had a distinctive symbolic meaning, and although to place the head of a bird with wings upon the body of an animal, created (so to speak) a monster, yet looked at from the symbolic point of view, it was, when the attributes of the creature were understood, a reasonable enough proceeding.

Such an object was the Griffin, composed of the head and wings of a bird with the body of a lion. This creation was considered as a symbol of watchfulness, and as such has been used as a crowning member or finial upon the top of the piers that flank the gateways of public buildings. It is from such forms that the later grotesques have descended, great use being made of them in Gothic and early Renaissance times.

There has recently been a revival of these objects, especially for interior decoration. They are suitable and interesting subjects to place upon the principal newel post of the main staircase in private houses, and were thus used during the Elizabethan period. Many excellent examples are to be met with in old mansions. The celebrated staircase at Crewe Hall has several of these figures placed upon the newels as supporters of shields.

In those days the supply of wood was practically unlimited, being obtainable from the oak trees of the local parks and forests. Therefore the question of scale and material was simplified. It is not difficult

to design an effective Griffin under such circumstances, but as the people of this generation are gradually using up most of the available timber at an alarming rate, it is necessary, both by reason of cost and

FIG. 144.—GRIFFIN ON NEWEL POST

FIG. 145.—GENERAL SKETCH

economy, to so restrict the design that the least possible timber shall be wasted.

Now, as the Griffin or grotesque object which we are treating is not a representation of any living object, only parts of several creatures being taken,

we are able to so treat it that it will be moulded out of fairly narrow wood, say, 6 in. or 7 in. square in section by, say, 16 in. or 18 in. long. It will readily be seen that limitations are thus imposed which governs the design to a certain degree.

FIG. 146.—FRONT VIEW OF GRIFFIN

FIG. 147.—SIDE VIEW OF GRIFFIN

The wings, for instance, must not have a spread of more than what the section will permit. A wider spread and a better effect could be obtained by placing the wings on the diagonal line. The direction of the head would then be at right angles to this, the

line of direction being the other diagonal (see Fig. 151); but this method requires greater skill, as the pattern cannot be transferred direct upon the wood, as in our example. Thus such work is best left for those who have had an art training in modelling.

Attention is called to the basis of the idea, as shown in Fig. 148, *a*, *b*, and *c*. If a skeleton of a bird is studied and the detail thus seen reduced to general masses (*b*), we have a good idea of how to start on our work. The necks of birds and reptiles are long when seen in skeleton. Note, for example, how much like a dragon they are when mounted as specimens of anat-

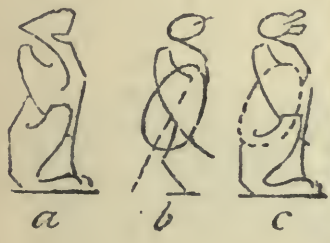


FIG. 148.—OUTLINES SHOWING BASE OF IDEA

FIG. 149.—PLAN

omy in our museums. It would be comparatively easy to make a rough clay model of the general masses of our Griffin, and the work would be eminently instructive. If any carver who reads these chapters has seen how taxidermists wire and form the heads and bodies of birds and animals, it would give them a good lead.

In our illustration of the front view of a Griffin (Fig. 146) the arrangement of the wings is not wholly satisfactory. It would be better for appearance sake to move the upper parts away from the neck; the reason they are shown close under the head here is

that, unless they are connected to the neck at that spot, the neck (being thin and under cut) is in danger of being broken. When the wings are connected to the back of the head greater support and strength is afforded. There is no reason why these arrangements suggested should be strictly adhered to ; the idea, well carried out, is the main thing.

In carving, it would be best to transfer a general sketch, as shown in Fig. 145, upon both sides of the wood, and then to cut away with cross cuts by means

FIG. 150.—BLOCK OF HEAD

FIG. 151.—SKETCH PLAN

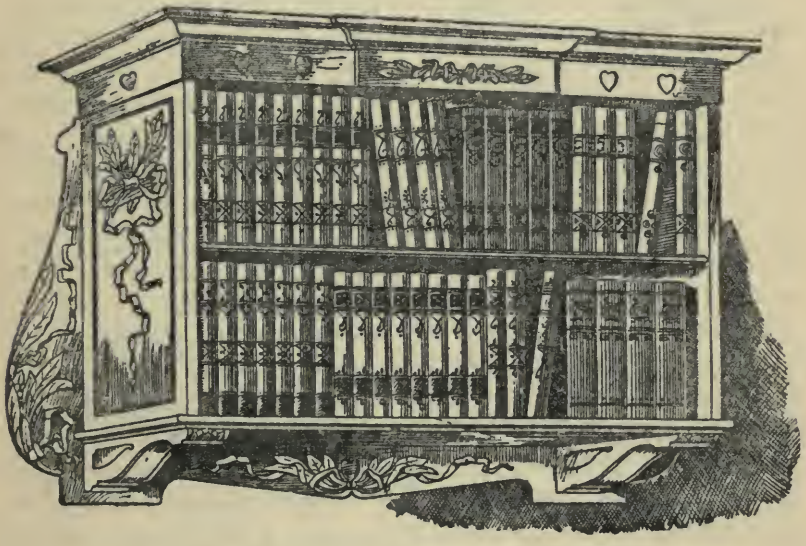
of a saw or large chisel those parts marked solid black upon the drawing ; the parts shaded are cut away afterwards. The instructions that have been given in former chapters should afford an insight into our methods, and with the help of the sketches it should not be very difficult to carve an interesting object.

In a former chapter, dealing with the cabriole leg, we gave some hints on the treatment of the feet and other parts which will be useful for reference.

Carving Grotesques: The Griffin

The general appearance of our Griffin is seen on a newel post, as shown in Fig. 144. The post can be of any suitable design, and narrower or wider than the object placed upon it, as desired. Illustrations of prehistoric monsters, the remains of which have been found in fossil form in alluvial deposits, give us many strange forms which we can make use of, and the fact of their having once existed adds interest as well as mystery to our creations in this direction.

Any hard, close-grained wood would do for this object, but it must be tough and strong, as the position of a newel post is exposed and comes in for a few knocks, no matter how great care may be taken.



DESIGN FOR CARVED BOOKSHELVES

XXI.—FIGURE CARVING

PANELLED FIGURES

A CHAPTER on the woodcarving of panels, etc., containing the human figure is necessarily deficient in such instruction that can only be imparted by demonstration or by skill obtained by practice in the workshop and studio. All that can be done in a satisfactory manner is to set out a more or less practical line of thought and method, such as may have struck one in working from the drawings usually supplied to craftsmen.

Following this idea we show a figure representing one of the seasons, Autumn. Having settled upon the size and proportion of our panel, say, a vertical one, 20 in. high by 8 in. wide, we take some pose, the leading lines of which tend to fit into our panel in a satisfactory manner. (See Figs. 153 and 159.) Carvers, who have attended art classes, and have drawn either from life or the antique, have a considerable advantage over others, but even those who attend such classes rarely give adequate thought to the sectional values of the models. Unless the study of light and shade and line values affords some knowledge of sectional form, it is of little use to the craftsman; therefore it is very good in practice, when a sketch or light-and-shade drawing is made, to put in horizontal and vertical section lines, either on the actual drawing or at the side. The drawing would then be of more practical use and would be valuable for future reference.

Composition and flow of line are of such importance to a successful woodcarver that, although design and composition hardly come within the scope of

these articles, we cannot quite ignore it. Take any outline of a figure that appears to fill a given space in a pleasing manner; then search out in your mind for the reasons of the same.

FIG. 152.—CARVED PANEL, 'AUTUMN'

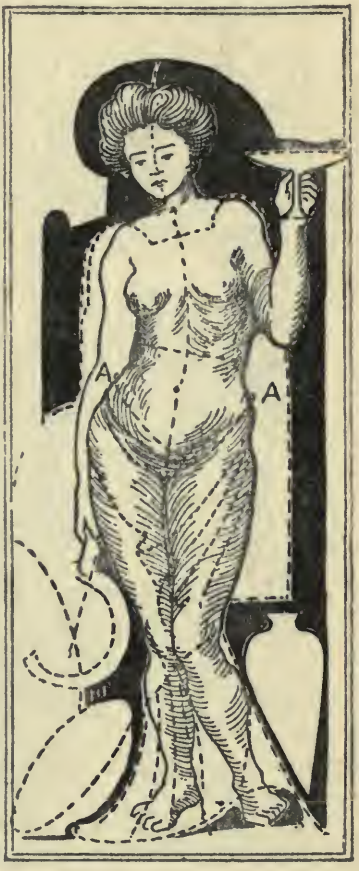


FIG. 153.—GENERAL POSE OF FIGURE

Our present example is developed from one of the ordinary life class poses used in Art Schools. (See Fig. 153.) The dotted lines are run in upon the nude

figure, showing the flow of the drapery and the cause of it. The under figure or body should always be

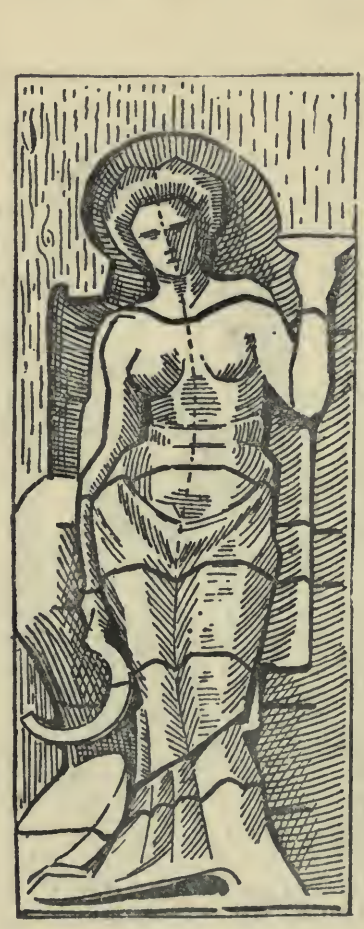


FIG. 154.—FIGURE AFTER FIRST BLOCKING-OUT

FIG. 155.—VERTICAL SECTION

studied before drapery is cut, as it prevents mistakes, drapery being entirely governed by the contour of the modelled form. Note the lines of suspension across

the hips AA, Fig. 153. These will guide important cuts, which should be directed downwards from the points of suspension. As much as possible should be made of these long folds in sweeping cuts. Drapery should be kept simple and the folds few in wood-carving; it is better to reduce rather than increase the number shown.

We will now assume that the design has been increased to the required size by means of the well-known method of squared lines or spaces. When this is transferred to the wood, cut or set in the outline of the figure and the general masses of the accessories.

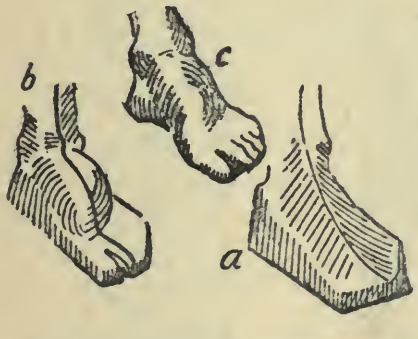


FIG. 156.—DETAIL OF FEET

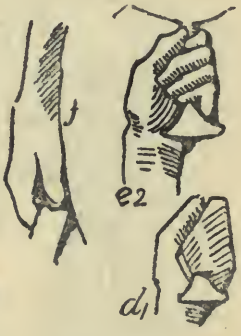


FIG. 157.—HANDS

When this setting in has been done, gouge out the parts marked black in Fig. 153 to a depth of about $\frac{5}{8}$ in., working from the outside inwards. The deeper part of the cut will then be close to the figure. If this is cleaned out well it will give a good start. One thing that must not be forgotten is to keep the figure full in these first cuttings, as our drapery and detail has to be cut upon what is left.

After releasing the wood and working all over the ground, our wood should have somewhat the appearance of that shown in Fig. 154. Section lines are shown in a horizontal direction on all the impor-

tant parts of the body. For a central and vertical section, see Fig. 155. Everything should be cut on the square system at first, leaving plenty of room above for detail. The feet and hands are cut in the same manner. (See Fig. 156, *a*, *b*, and *c*, and Fig. 157, *d*, *e*, and *f*.) Do not trouble about the detail of the head ; that will make a later study. Block it in as in the upper part of Fig. 154. Then model out the drapery, paying particular attention to the section lines. Curves of drapery could be cut in facets with advan-

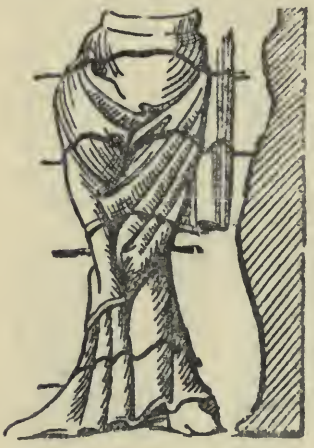


FIG. 158.—DRAPERY SECTIONS

FIG. 159.—LINES OF POSE

tage. It is a good plan to mark in the points of highest relief (see vertical section) with white chalk, otherwise the figure might be cut too flat. It would be best, where possible, to refer to some well-known and nicely modelled figure of similar pose.

As this example is in half-relief, the back alone being attached to the ground, the front only need be studied. The accessories, such as the corn, etc., should be kept subordinate to the figure, and be in as low relief as possible ; the vine at the top need be

suggested only. As long as the edges near the figure are well treated such parts can be worked up according to individual requirements, this being a lesson on the general setting out of a figure the principal attention is given to it.

Fig. 158 is a drawing of the drapery with section lines marked upon it, such as they should appear when the drapery is finished off.

DESIGN FOR CARVED FRAME

XXII.—A CARVED MILITARY PANEL

THE previous chapter dealt with the method of setting out a full length figure in half-relief, or mezzo-relievo. This method of working has been kept in mind throughout this volume. From the very beginning of our work the general scheme and leading lines have been suggested. These, to be successful, must be arranged in a pleasing manner. The grouping is very important, but it can be readily understood that it is easier to take some subject or period that does not lend itself to minute criticism to the same degree as the costume and equipment of modern life.

It is not a healthy sign to run away from difficulties ; so here we set about a military panel, the idea being that the figures will do for almost any infantry corps. Matters of detail can be altered or added to at the option of the carver, and the arms at the top corner of panel can be adapted to suit any regiment.

The composition is shown with the leading lines in Fig. 160. There the general pose and curved lines promise a more pleasing appearance than it is possible to obtain in the treatment of modern uniform. It is as well, however, to remember that the pose is there, although covered up in stiff clothing.

It is the use of right or straight lines enclosing the outline of the figures that will give the best guide for starting cuts. The parting or V-tool would be useful to line out with, taking care to keep the form angular at first instead of round. The rounding should be in all cases the very last work to be done. Fig 162 will give a general idea of the first cuttings, shown

FIG. 160.—DESIGN FOR A MILITARY PANEL
(REPRESENTING THE FINISHED CARVING)

in the square facets. To more readily follow the scheme as shown, work in a strong side light, so that when

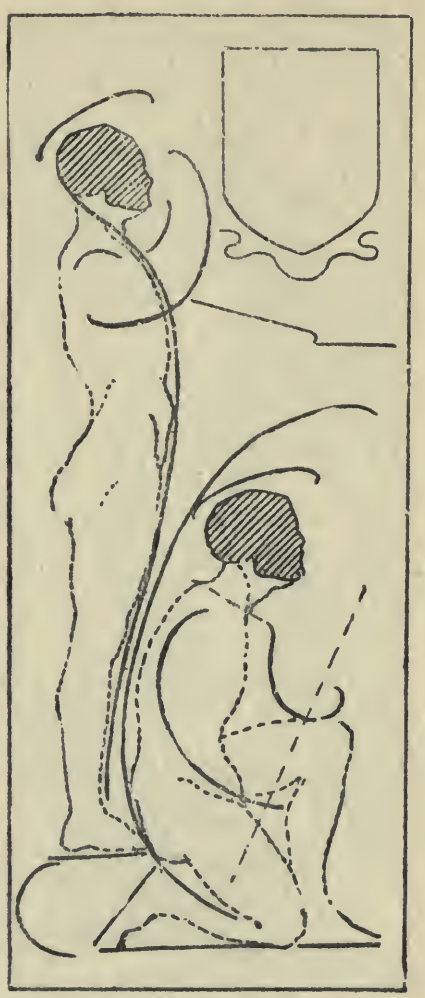


FIG. 161.—THE COMPOSITION

cut the shadows are as in the illustration. So far as relief is concerned, a simple and effective method is

to cut off the face of the panel into rectangular planes, as shown at Fig. 162*a*, and then trace the detail be-

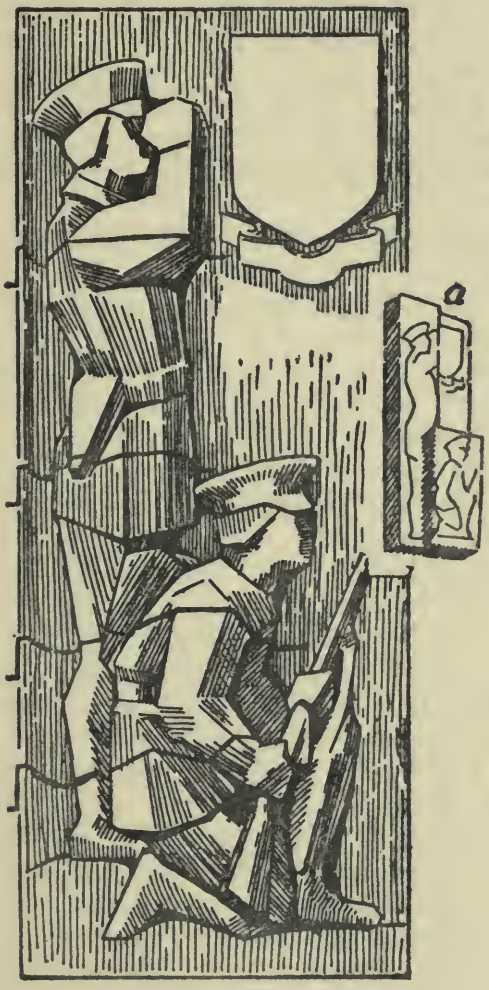


FIG. 162.—FIRST STAGE

longing to each plane upon those surfaces. This is only the correct method when it is desired to have

the figures in as much relief as the wood will allow, and when no side wood is to be left.

Other detail (except the regimental arms) is simply incised in with the V-tool. When the method of cutting the background is not as in Fig. 162, it is better to base it upon the section of a saucer, as mentioned in former articles. It should be understood that the method mentioned and illustrated in Fig. 162 is a good one when it is desirable to have thin edges for framing.

It is a mistake to endeavour to get much detail into the hands, etc., of the figures. A broad conception of such is the safest to attempt. To round fingers and other detail to a minute extent usually means disaster, and in most cases, does not add to the beauty. Woodcarving, more than any other craft, has limits which should be frankly recognised. It is possible to do wonderful things by means of care and patience, but beyond certain limits it hardly pays in the long run. As an example, if the detail was cut on work that had reached the stage of Fig. 162 (that is, not much more than incised in), very little more is needed, although this little must be done with great care. In old carving the apparent ease and the simple methods in which the work appears to be done are its chief charms.

One or two chisels and the V-tool are all that we need to get as far as in Fig. 162; the gouges are best left to finish up with. Experience teaches that, if the gouges are used for this sort of work from the start, it is almost impossible to get the carving to look crisp and workmanlike afterwards. For the hands your own may be used as a guide, working with a glass. Never lose sight of the fact that you are working in planes.

XXIII.—CARVED HEADS FROM SHADED DRAWINGS

THE difficulties of carving from a shaded drawing or a photograph would be greatly reduced if some reorganised system of expressing planes could be devised. These planes should be shown by the effect of the light coming from one direction only; and, after the working drawing is made, some indicating mark should be placed upon it, giving the direction of the rays of light. Subtle and clever drawings that give a pleasing and artistic effect, although successful from an impressionist and art point of view, are misleading to work from.

Planes (or, in other words, facets) of different sizes according to requirements are the governing principle of all relief work. There need be little fear but that the carver will round or smooth his work up sufficiently. The principal endeavour should be to keep the carving in simple planes or facets as long as possible. This method gives force and character to the work. In Figs. 163 and 164 are shown two drawings. Fig. 163 is from a sketch, Fig. 164 from a photograph. In both cases the facets or planes are purposely exaggerated, and only just sufficient drawing is done to indicate our idea.

The methods of the artists in the early days of pen and ink work were more useful from our point of view, owing to their directness and the use of the right or straight line. With but an elementary knowledge of anatomy, work could be done from their drawings much more easily than at the present time. It is to be hoped that at some future time a standard of technical drawing for craftsmen will be introduced

FIG. 163.—STUDY OF A HEAD FROM A SKETCH

FIG. 164.—STUDY OF A HEAD FROM A PHOTOGRAPH

THE ARROWS INDICATE DIRECTION OF LIGHT

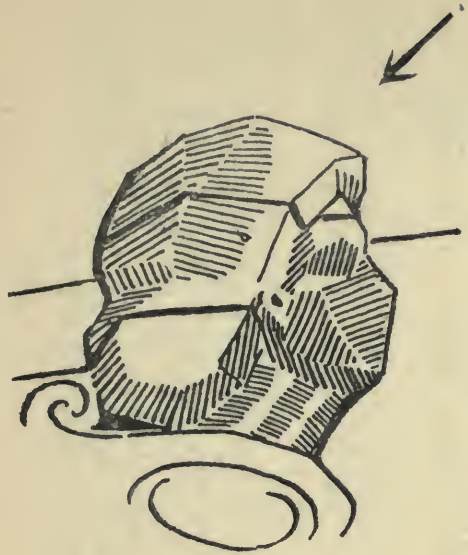


FIG. 165.—MASSING OUT

FIG. 166.—SECOND STAGE OF MASSING
THE ARROWS INDICATE DIRECTION OF LIGHT

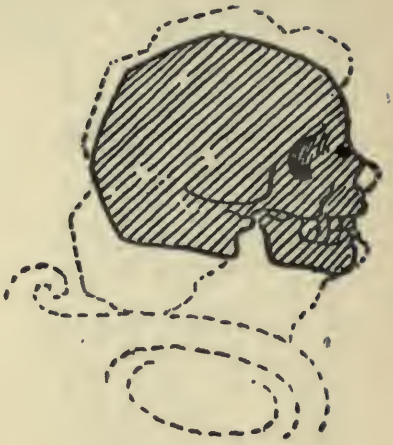


FIG. 167.—INFLUENCE OF
THE SKULL

which, while being artistic, will yet mean something definite in the way of planes and mass of general form. Our schools neglect this principle. Broad obliterating effects are aimed at which (although probably the right style for producers of pictures) are of little or no use to craftsmen, unless they have had more than ordinary training. It has been proved that very many students cannot put a correct section line upon a drawing of their own execution when away

FIG. 168.—SECTION LINES.

FIG. 169.—SIDE VIEW

from the actual model. This should be remedied by practice; it is half the battle to realise the main planes.

For example, see Fig. 166. Note the direction of light, and after doing so place your wood so that when cut it will show the same light and shade in the planes. Keep it in that position as much as possible while carving. If this is not practical, put your work from time to time in the required position in order to see how things are going.

The process by the above method is as follows: Fig. 165 is the first cutting or massing out; Fig. 166 the second stage of same; and Fig. 163 is a drawing reduced to lines suggesting facets. The influence of the skull is shown in Fig. 167. No hair lines are shown on these drawings, it being felt that the carver will go for them quite enough at the final cutting without

FIG. 170.—SECTION

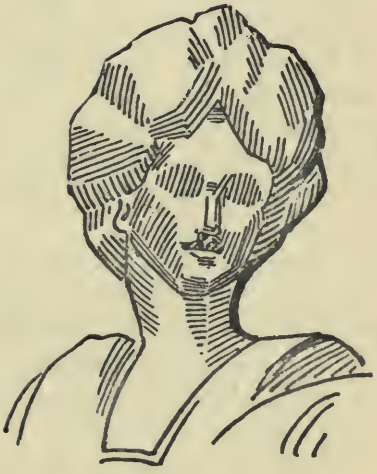


FIG. 171.—SHOWING LIGHT FROM ABOVE

any further suggestion from us, except that the slightly hollow cuts usually used to represent hair should run in a proper and natural direction. Common sense and a little observation should be a sufficient guide.

In practice, or for learning purposes, these heads should not be cut in a circle of less than 7 in. or 8 in.

in diameter. The idea is not so much to copy as to apply the principle or method shown to some good illustration that it may be the wish of the carver to execute. In Fig. 164 we have the light coming from the direction opposite to that of Fig. 163, but it is drawn on the same principle. The section lines are given in Fig. 168, and a suggested probable side view in Fig. 169; but, as the depth of panels is limited, Fig. 170 is given to show a section over which the idea is worked out. It must be remembered, however, that it is possible and usual to work in much lower relief than this. Much, of course, depends on requirements, and in every case it is a good practice to work as deep as the wood will allow as, owing to the usual or natural colour of the wood, light and shade is more or less absorbed, and what would look well modelled in plaster or marble is, may be, lost in woodcarving. Thus the bolder work is the more pleasing.

Nothing has been said here about the cutting away of the background for, although some of us prefer to cut away from the outside, deepening towards the head—a very effective method—yet it is not always the best way. Here again other considerations must guide the carver.

Fig. 171 is an example of the same head with the light more directly above, it being sometimes useful to think out several views.

No more intelligent form of study can be taken than that of practice in fairly dry clay. This should be applied to a firm surface (say a slate or a piece of board), the clay being pressed on in the shape of a slab the same thickness as the wood would be. Cut the clay out as in carving, either with modelling tools or (preferably) carving tools, which must be wiped clean and oiled and dried afterwards to prevent rust. If clay is used as a preliminary study and mass model,

it is possible to renew any part cut out by mistake. The effect of light and shade can be gauged, and good wood can be saved for a final attempt.

All the above directions relate of course to the working from light and shade drawings, upon which we have to assume our own sections. Working from the actual relief model is a different thing, as the carver has it before him to observe.

CHIP-CARVED DESIGN FOR TIMEPIECE

XXIV.—CARVING ON EARLY VICTORIAN FURNITURE

DURING late years it has been the custom to much abuse the furniture of the nineteenth century, especially that known as the Early Victorian. Now, though much of this abuse may be well deserved, owing to the excessively heavy build and the solid style of its ornamentation, some redeeming points have been overlooked.

FIG. 172.—HALF OF PEDIMENT WITH EARLY VICTORIAN CARVING (SKETCH OF LEADING LINES IS GIVEN ABOVE.)

In the best examples, such as are seen in sideboards, pediments, overmantels, couch ends, etc., we often come across examples of a vigorous and characteristic treatment of the acanthus leaf; see the inside of knob-like terminals used at the end of some of the lobes in our illustrations, Figs. 172, 173, and 174, and also notice the concave hollows that lie beneath them. These give a contrast and variety to the other parts

of the leaf which, when well rendered, are very effective.

The furniture of that period was mostly made of good hard and sound mahogany of fine red colour, and it was also the custom to polish any of the smooth and rounded parts that lent themselves to that process,

FIG. 173 (*a*, *b*, and *c*).—ENLARGED DETAIL OF ORNAMENT ON PEDIMENT

a proceeding that it is not always possible to defend. There is still a good deal of this furniture in existence, and its many excellent qualities make it well worth preserving and in some cases adding to by new work in that style. It is for such a purpose that this chapter is written.

CHARACTERISTICS.—Care should be taken to separate the different styles of working. It would be well to get the idea impressed into the mind that we are here treating with what is eventually gouge work, the main effect being produced by these tools of different contour. The sharp edges near the turn-over of lobes are obtained by the juxtaposition of one gouge form to

FIG. 174.—PORTION OF OVERMANTEL, SHOWING STYLE OF CARVED DECORATION. NOTE DETAIL AT *a*

another; the hollows behind the knobs are cut out sharp and clear, such a cut as can be put into a piece of cheese. When well done the work has a strong and fleshy look, and gives an impression of the solid English character behind it. That it was used in a wrong manner does not mean that it was wholly wrong, or that we have not made a mistake in going to the other

extreme by calling everything good that has a weak and spindley outline with a slight Chippendale character.

When the firelight plays upon the varied and polished surface of the remains of our grandfather's furniture, giving charming degrees of light and shade, there are many who will feel sorry that they have, under the influence of fashion, either parted with or

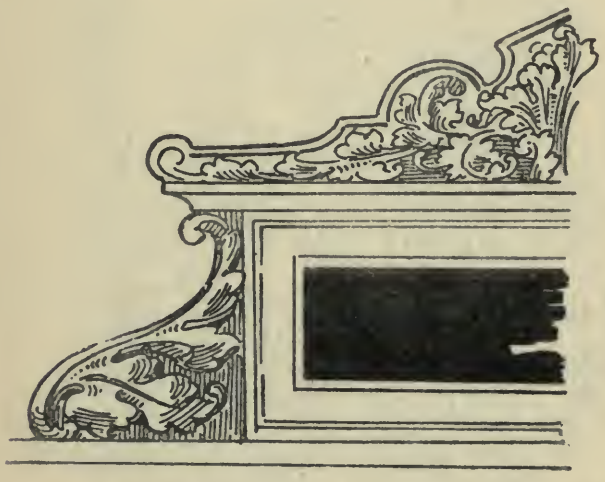


FIG. 175.—EARLY VICTORIAN CARVED DECORATION APPLIED TO FRAME, OVERMANTEL, OR OVERDOOR

destroyed many pieces they would now view with affection.

The examples used in the illustrations are taken from impressions which these have made upon the carver. The contours are given upon some of the details by means of section lines, and it should be be noted that there is a great deal of difference between this style of cutting and that in which angular or V tool cuts are mostly used. V or angular cutting is easier to do, and, although very effective in its way, has a monotonous and cheaper look than the class of

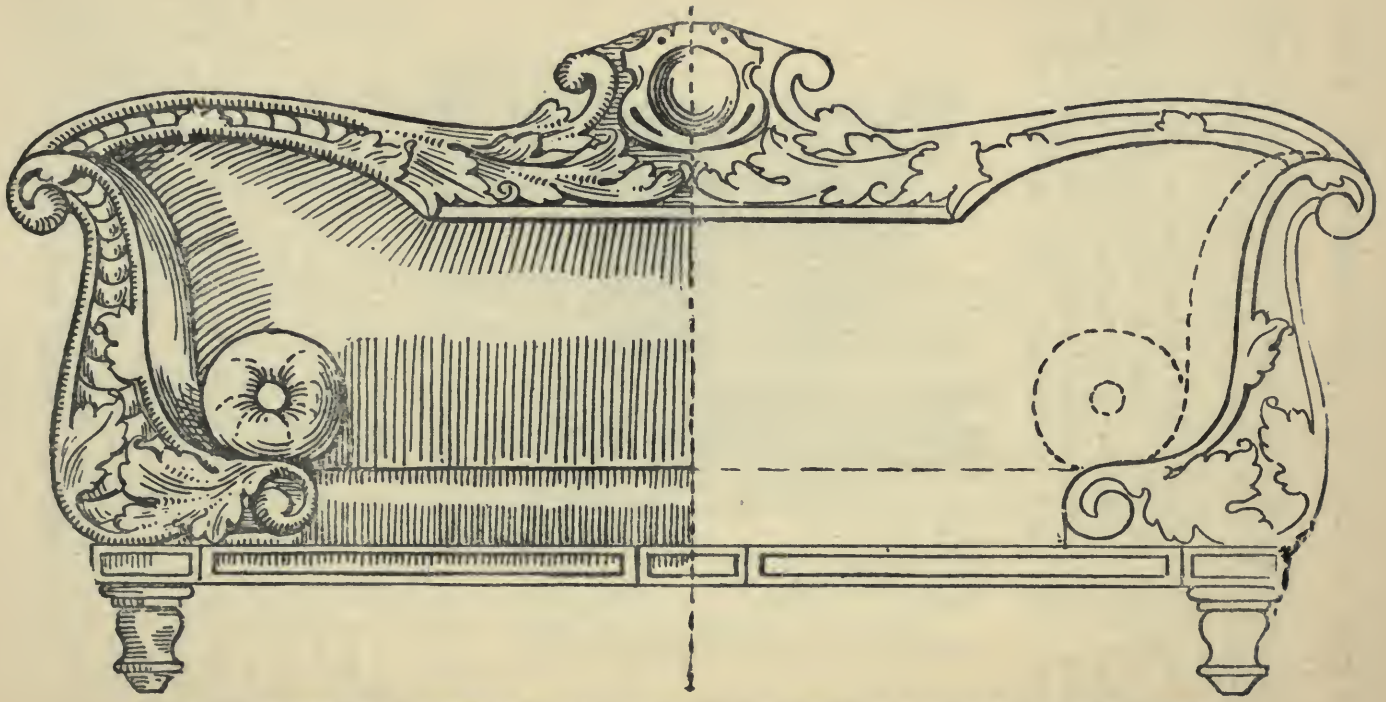


FIG. 176.—EARLY VICTORIAN SOFA, SHOWING ONE SIDE IN OUTLINE AND THE OTHER SIDE WITH CARVING COMPLETE

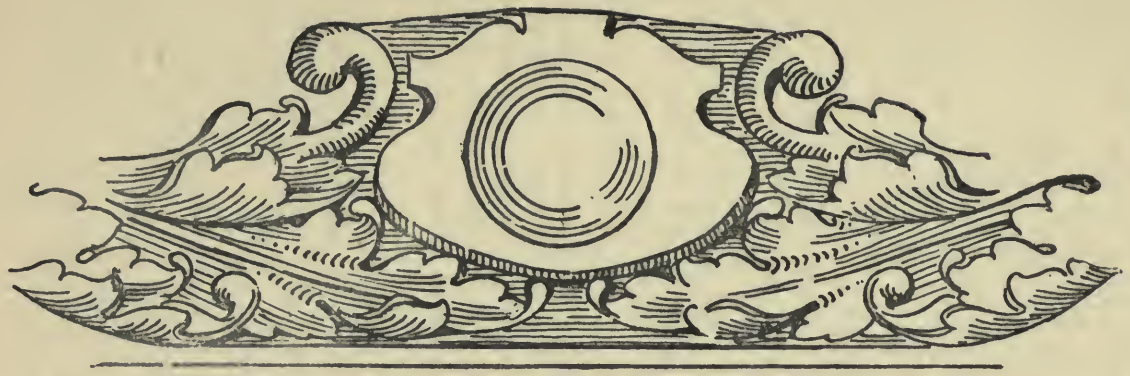


FIG. 177.—SHOWING (ENLARGED) TREATMENT OF CENTRE BACK

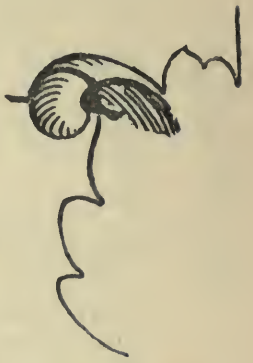


FIG. 178.—DETAIL

work illustrated. Good gouge work requires more skill and judgment, with a necessity for much cleaner cutting and finishing off.

A method of using the side view of a leaf for end pieces is shown in Figs. 174 and 175, the intention being to give a lead as to how this style of work can be used to best advantage. It would be easy with practice to adapt detail of this sort to fill up any shape of panel, or to envelope almost any outline such as the Victorian sofa or settee back, etc. This class of carving is only suitable for hard woods, such as walnut and the best kind of mahogany; there are also some very good woods of excellent colour that have been finding their way from our colonies that may eventually replace the best kinds of mahogany, now getting so scarce and costly. To those who wish to have more practice before carving for use, the details shown in Fig. 173, *a*, *b*, and *c*, would make good and useful exercises, and the border of Fig. 174 could be used as decoration for a frame.

Application of Early Victorian carving.—At Fig. 176 is suggested the general outline of a sofa or couch. Upon this is indicated applied carving which should occupy the spaces in a suitable manner. The example chosen is a common one, and should be well known to every one, there being a great number in existence.

Being usually made of excellent mahogany, these sofas are rapidly becoming more valuable owing to the growing scarcity of this wood and the consequent increase of prices. Many, unfortunately, have been destroyed or sold for a mere song, owing to their being out of fashion and also to their heavy and solid British character. At a future period, at the turn of the wheel of fortune, they will probably be much sought after, and there is no reason why they should not be made at the present day. If of good design and

suitably carved they should be a source of comfort and satisfaction.

There is insufficient space here to go into the details as to what principles govern this style. It is enough to note that the Victorian idea was in this case influenced by what is known as the French Empire style, the outline of a sofa being an English rendering of the latter. Most of the articles that we see about are of the horsehair period, but it can be easily realised that there are possibilities as regards effective colour covering to contrast or to harmonise with the rich effect of the polished mahogany.

THE BACK.—This couch could also be made of walnut with success. The principal item to consider is to keep the cutting bold and somewhat rounded on its outside edges. There should be nothing small and fussy about an article that is in constant use. Detail should not be too much undercut; broad and large masses may be, to a more or less extent, as their size protects them. For example the upper halves of the back can be deeply cut, provided care is taken that sufficient attachment is left to hold them securely to the ground. If existing examples are examined it will be noticed that there is a predominance of convex or rounded form on the outlines of the furniture and carving. The general idea of the back should be to give an impression of a vigorous sweep of cutting from the right and left hand corners towards the centre, giving the pattern a line of direction so that the foliage appears to flow round the central cartouche. It is this simple arrangement of sweep that makes many of these backs satisfactory. Unfortunately there are many examples where the pattern is utterly broken up and disjointed, being in fact an almost grotesque treatment of the Rococo style of detail without its charm.

CARTOUCHE.—We come now to another and important part of the scheme, the centre. The simple

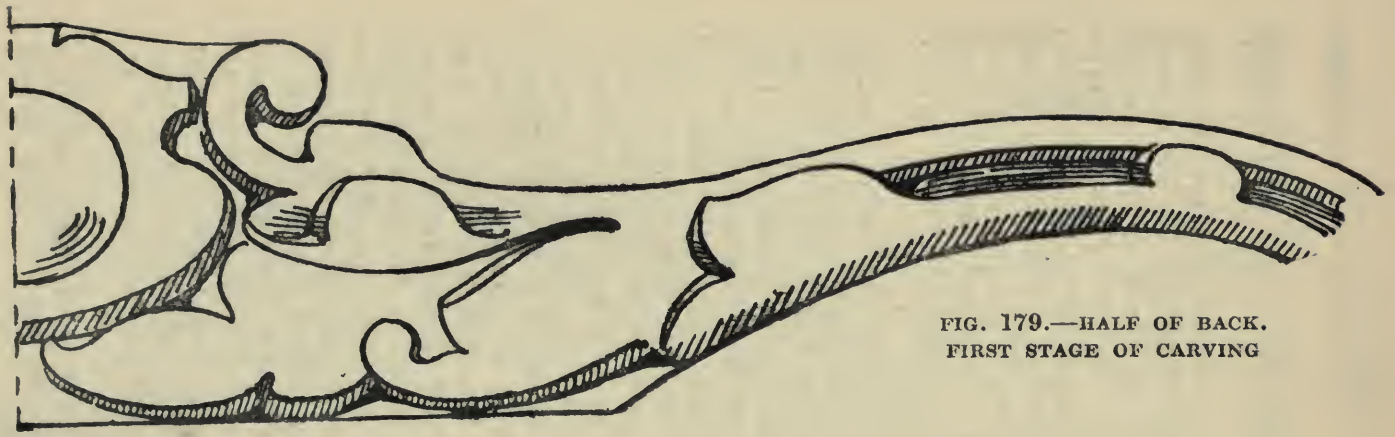


FIG. 179.—HALF OF BACK.
FIRST STAGE OF CARVING

FIG. 180.—HALF OF BACK.
SHOWING FINISHED CARVING

form of cartouche is taken as it answers the general purpose we have in view, that of spacing; but it must be understood that, being the centre of the furniture and (so to speak) the crown of the carving,

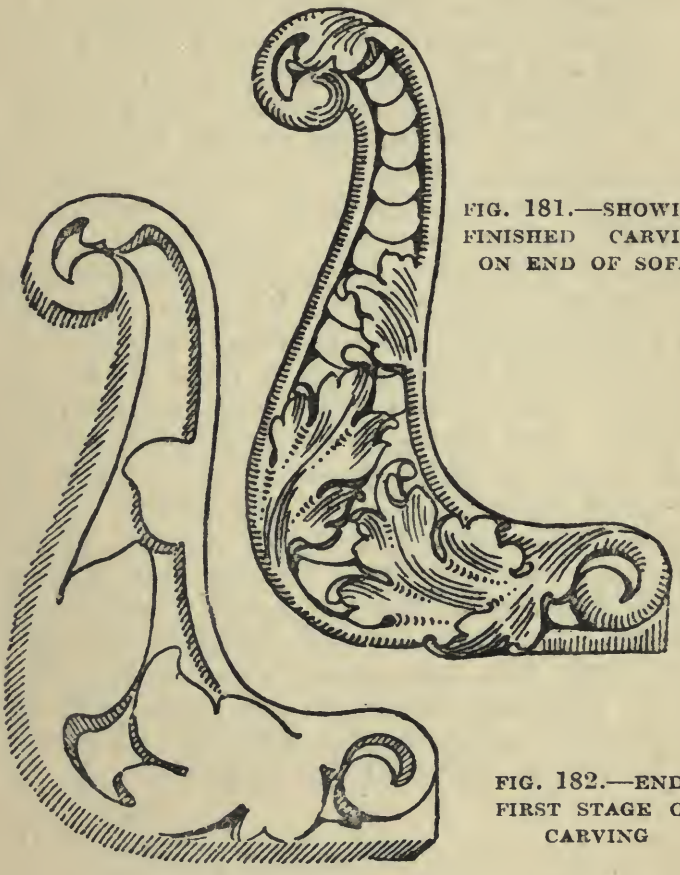


FIG. 181.—SHOWING FINISHED CARVING ON END OF SOFA

FIG. 182.—END; FIRST STAGE OF CARVING

it is here that room can be found for individual preference in the way of cartouches or shields carrying simple coats of arms or monograms. (See Fig. 177.)

The impression that the whole back should give is that of the principle of symmetry or symmetrical

arrangement. The bottom line of the centre of back should be straight to harmonise with the line of the seat. The wood part of the seat, which should be simple, with few mouldings, if any, can be divided into surface panels as in Fig. 176.

Ends.—The most difficult parts to design and also to carve satisfactorily are the carved ends or arms (Figs. 181 and 182). They should always have a convex or moulded outline as they are the most liable to come in contact with the person, and it is also better to so arrange the carving so that the foliage should face inwards towards the centre. The carving is thus to a certain extent protected. (See Fig. 181.)

The one thing that requires impressing on the mind of the worker with regard to this type of carving is that it should have the appearance of being full and fleshy, and that the turned-over ends of the lobes of the leaves should be a little thick and rounded or knot-like. Any deep cutting to get light and shade should be on the inside, as Fig. 178. It is a matter of choice what is done with the background. It can be left plain with advantage, or, if treated at all, should be on bold lines similar to the example shown. At present the carver is more or less governed by styles. That being the case, the best thing to do is to take lessons from the best examples only, and to steer wide of what are obviously bad features in detail. The general outline of the furniture does not rest with the carver, but with the designer.

XXV.—FESTOONS OR SWAGS

DECORATED catenary curves, known as festoons or swags, are much used in carved work, especially in architectural details, such as friezes, heads of panels and dado borders. They were a very important item in the Renaissance period, based as they are upon the suspension of a cord or other flexible material from two points, the fulness of which cord forms a graceful curve. When they are only slightly decorated—that is of a simple chair-like arrangement—they are catenaries; the real festoon is heavier and fuller in general appearance (Fig. 183). Catenaries were much used in the Adam period, being formed of a series of single blossoms, mostly of a bell-like form (Fig. 188).

Carvers are often called upon to make use of festoons. Much of the work of Grinling Gibbon was of this type. The object to which the carving is to be applied governs the proportions of the festoon. Heavy groupings of floral forms would be rather out of place on very light furniture, but would be suitable for the heavier styles, panels placed over fire hearths, friezes above panelling, and in some cases at the heads of the panels themselves (Fig. 185), these panels being of a more or less architectural character. Fig. 184 would do for a panel placed over a fire hearth, or for a treatment of the frieze.

Fig. 183 gives the proportions most used when the festoon is required to be full and the carving strong. The usual way to start cutting is to place containing lines around the outline of the transfer, and then to cut the ground away, leaving the festoon as in Fig. 186. It is then possible to release the wood by working from either side. When the general forms have been

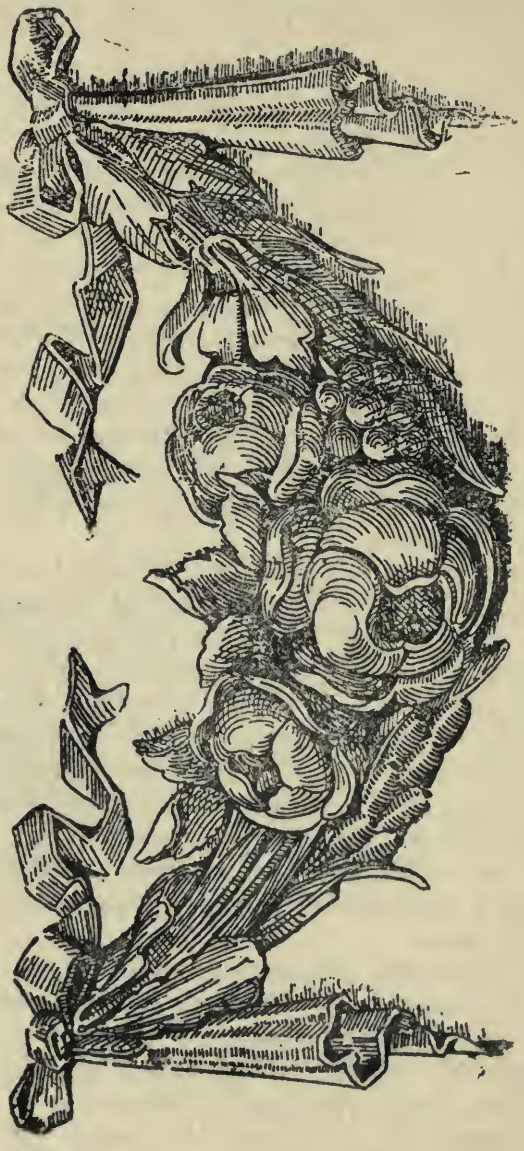


FIG. 183.—CARVED FESTOON

massed out the deeper parts can be sunk in. This can be partly done by boring to the required depth, the carving tools being afterwards used to shape these holes into the required outline. Work of this type looks better if the hollows are sunk to a certain amount of blackness or depth.

Many architectural festoons are of simple form, with deep holes or recesses cut in the under part of bell-shaped floral forms, as in half of Fig. 190. These were for broad effects, placed high up ; for work closer to the eye, as most wood carving is, something more interesting should be used, and following on more natural lines. A good general effect of rich floral growth is the object of the carver. Roses in any form, either fully or partly open, can always be introduced in English carving. This is our national flower, and has always been the favourite for use in festoons or garlands. Earlier we indicated how to carve a spray of roses for the purposes of panel decoration, and the methods there shown and the manner of cutting apply equally to this article. Festoons are in better keeping when placed above panels, and not directly upon them (see Fig. 185).

Good taste was shown in the use of the lighter festoons or catenaries in the Adam style, the daisy chain-like lightness forming a pleasing ornament to the furniture of that period. They also sometimes resemble necklets in treatment (see Fig. 189). There are many examples of festoons to be met with, carved in both wood and stone. The two guiding principles of cutting differ in two particulars only ; namely, those festoons that are required to look compact, mainly for architectural purposes, and those which are opened out and cut upon a lighter or more spray-like principle. Clusters of fruit are usually bound or kept together by means of intertwining ribbons. Such festoons should be classed as the heavy type,

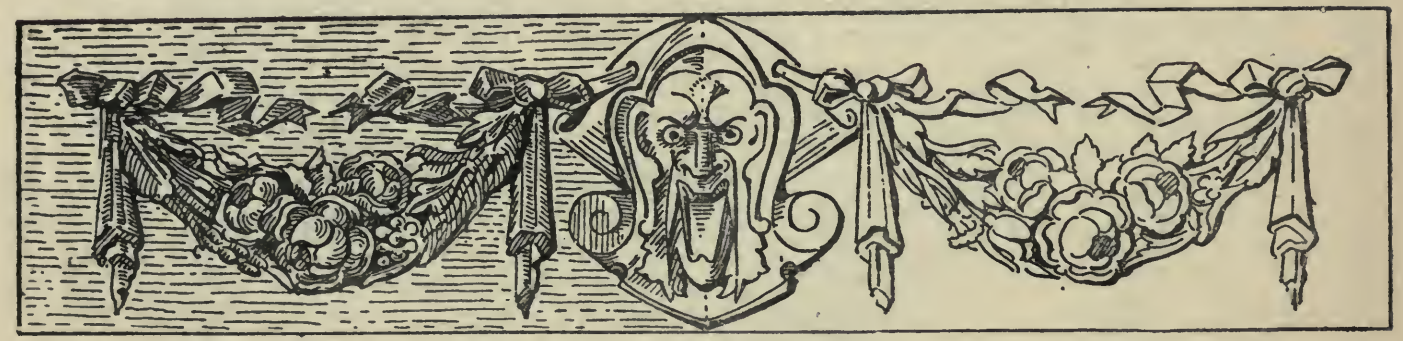


FIG. 184.—FESTOON ARRANGEMENT SUITABLE FOR FRIEZE OR PANEL OVER FIRE HEARTH

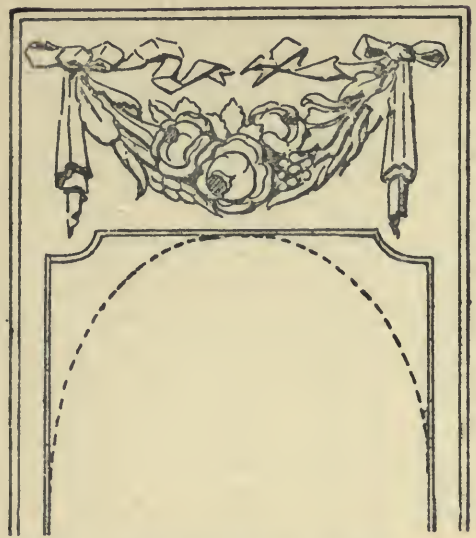


FIG. 185.—ARRANGEMENT ABOVE EITHER RECTANGULAR OR ELLIPTICAL PANEL

FIGS. 186 AND 187.—FIRST AND SECOND STAGES OF CARVING

FIGS. 188, 189, AND 190.—THREE TYPES OF FESTOONS

flowers and leaves being the best to use for the more open variety.

Where a series of festoons is required to be placed upon a smooth panel, as in a frieze, they should be cut out of a separate piece of wood and applied, as the labour and the waste of wood required in order to get the background down would be too great in solid carving. Sycamore, lime, pear or any hard and close grained wood is suitable. Birch, though very cheap in some localities, is unsuitable except for practice, as it soon becomes worm eaten and useless.

Section lines are given on Figs. 186 and 187. The carving tools should be kept very sharp, as broken edges or torn parts are not so easily remedied in the carving of flowers as in the treatment of leaves. A part broken out of the centre of a rose or some such regular flower is a disaster. As festoons, however, are opened or cut away from either side—that is, top and bottom—and as the curve is what is known as an open one, the task is easier than may at first appear.

XXVI.—CARVED CONSOLES FOR DOOR CANOPY

CARVING for building or architectural purposes is usually of a slightly different type from that which we have been treating in these articles. It is governed by different considerations, although the styles may be on the same lines as in furniture. Yet, owing to the many and widely different positions in which architectural carvings are placed, variety in proportions, etc., to suit individual requirements becomes necessary.

In the present example we may consider a design for a pair of carved consoles, or brackets, such as are used to carry a sort of covering or protection over the door lintel of some of the older buildings in this country. This method of forming a slight protection from the weather has been revived of late years in smaller houses. There are two general types of these consoles: those where the console or its curves lie in a more or less horizontal plane like our present example, and those in which the console is arranged in a vertical position.

Usually a certain amount of economy has to be observed in carrying out this class of work; and this is often determined by what the builder or architect is willing to supply in the shape of wood, unless the worker is carrying it out for his own pleasure or benefit.

Timber suitable for such purposes is more likely to rise than to fall in price; therefore, it is as well to practise economy. In this case it would be a saving to make the bracket out of two pieces, as illustrated in Fig.193. The best wood for the purpose would be oak, but if that was found to be too expensive in such large work,

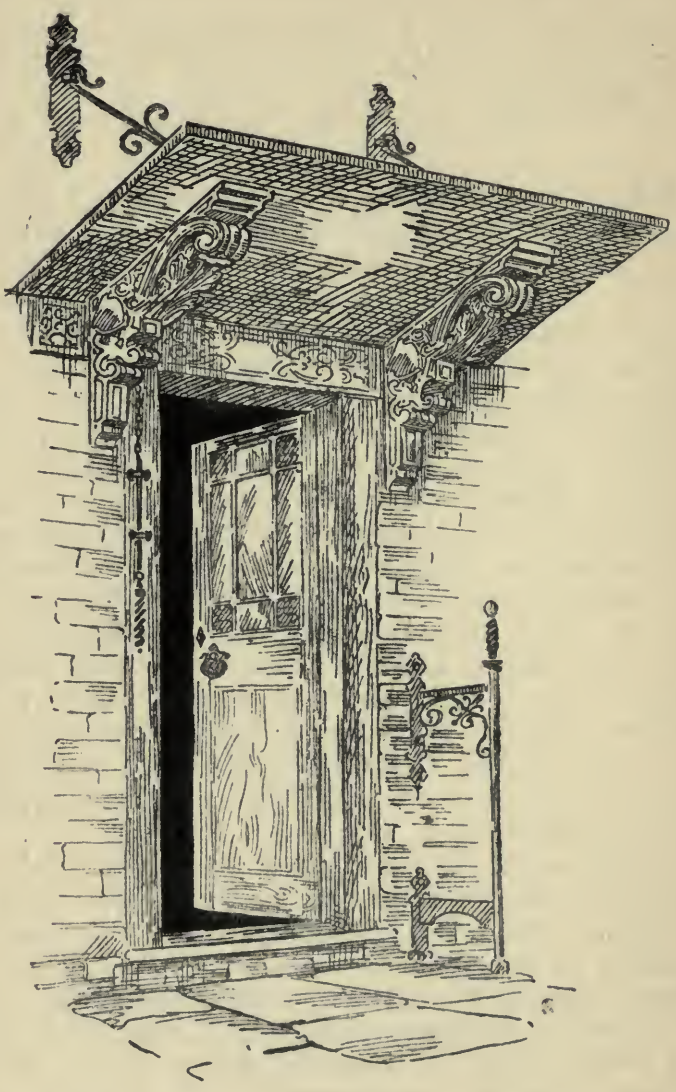


FIG. 191.—SKETCH OF CARVED CONSOLES TO CARRY DOOR CANOPY

chestnut would answer well, provided it were well chosen with the grain as close as possible. The wood should be dry, as all green woods are inclined to crack and open when the pores are exposed by carving.

Fig. 195 gives the second stage, showing how the general outline is cut out by means of a band saw. In our examples the under part of bracket is made of a narrower piece of wood than that of the upper part. This helps to break up what would otherwise be too flat a surface as seen from the side. The under piece should be let into the upper part, as in Fig. 193, and enough wood should be left on the upper horizontal part to let into the wall to form a support for fixing. The lower part could be fastened to wall by bolts, dowels or any other method, according to the nature of the material to which the bracket is to be fixed.

Fig. 192 gives an idea of the outline to be drawn upon the side surfaces before sinking the ground to form the strapwork. Parts of this strapwork are sunk deeply into the wood so as to appear to join with and to flow into the lower number. See the lower part of upper end marked A in Figs. 192 and 194, which give a general impression of the side view. It is advisable to sink the ground down to about $\frac{5}{8}$ in. in this class of work, as boldness is necessary to throw up carving in outside work. In Fig. 196 is shown the method of proceeding with the leaf forming the under surface. After this leaf is drawn upon the wood, as shown in the plan, Fig. 197, the eyes for the pipes are sunk and the containing forms of the lobes cut out (see B, Fig. 196). The volute-like ends of the console are best treated so as to appear to spread out as they turn over (see C C, Fig. 197).

These drawings are from work actually carried out, and there were devices and monograms cut upon the cartouches in the corners. Here they are left plain,

as such detail depends upon the requirements in each case. If desired, the strapwork can be slightly hollowed, should a little more wealth of detail be wanted. It is

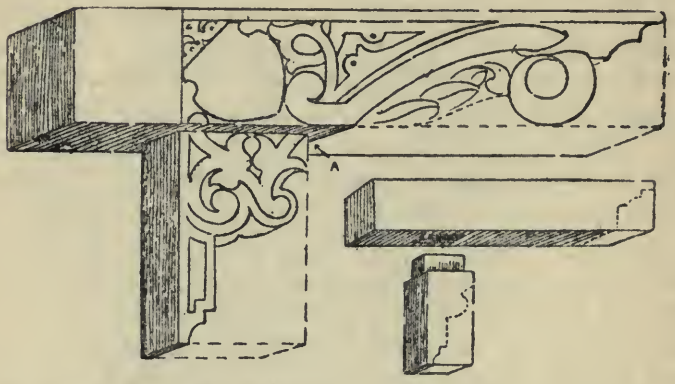


FIG. 192.—PATTERN MARKED ON WOOD

FIG. 193.—SQUARED TIMBER REQUIRED

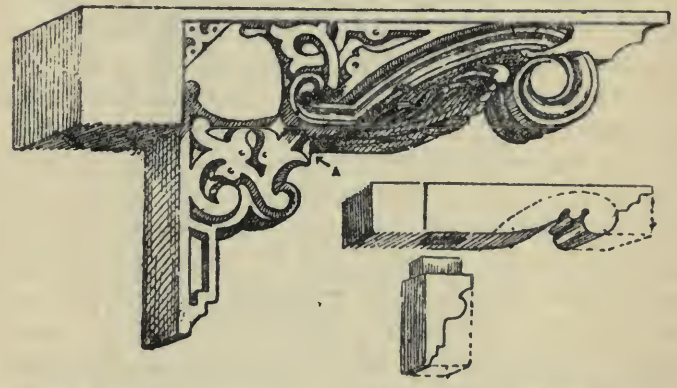


FIG. 194.—CARVED CONSOLE —SIDE VIEW

FIG. 195.—TIMBER AFTER CUT WITH BAND SAW

not advisable to undercut the lobes of the leaves too much, in case of fracture; only just enough being done to throw up the pattern and give the necessary relief. Fig. 198 gives a view similar to Fig. 196, but

showing the final stages. The drawings do not, of course, convey the amount of feeling that can be put into such work; this can only be seen on the actual carving.

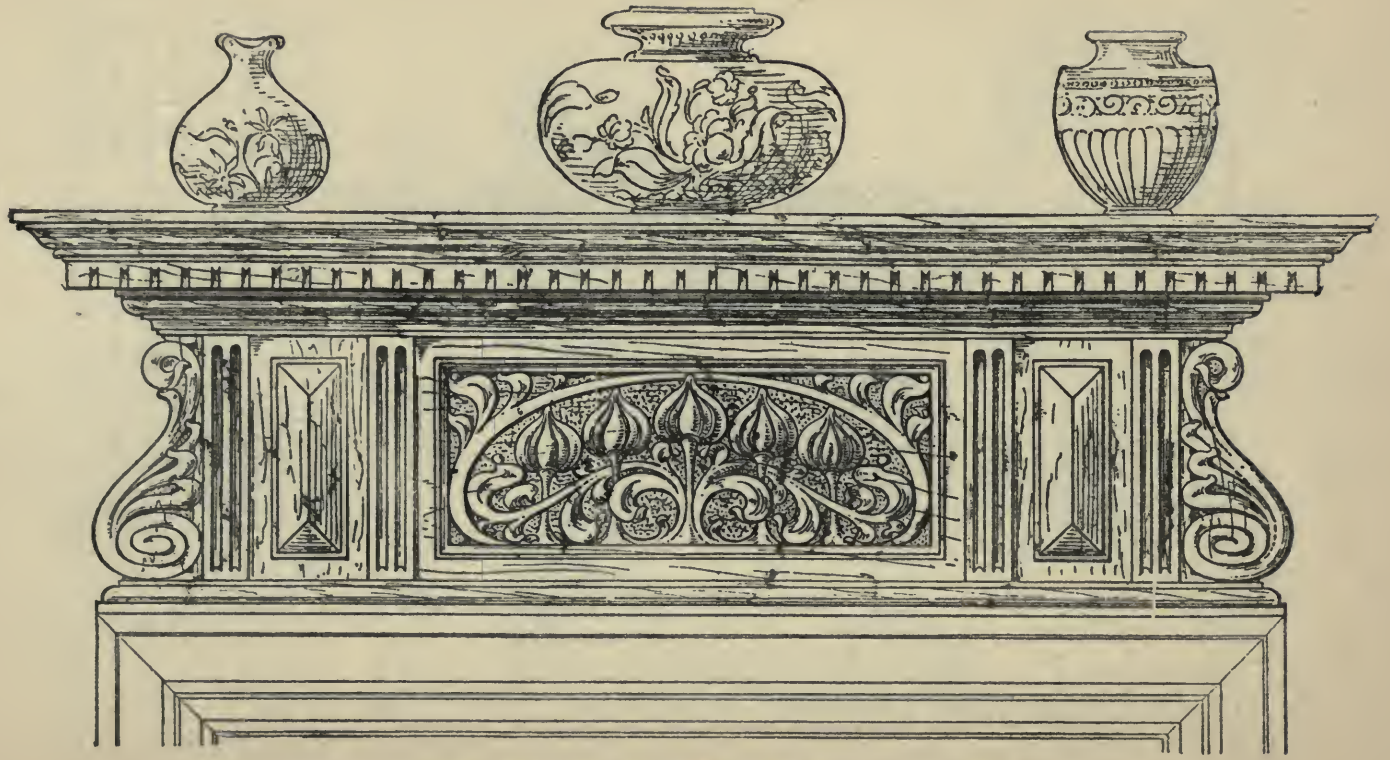
Consoles or brackets for doors, shop fronts and many other purposes are in constant demand, and this line of carving is a profitable one for young joiners and carpenters to take up, especially if they study suffici-

FIG. 196. FIRST AND SECOND STAGES

FIG. 197. PLAN OF CONSOLE

FIG. 198. FINAL STAGES

ently to be able to design or adapt so that their patterns can be cut in almost any form of wood supplied. Few people know how closely certain kinds of chestnut resemble oak in appearance, or how nice it is to cut in bold work and how durable when well chosen. In certain districts its cheapness is also a great consideration. Oak is undoubtedly the best wood for the purpose, but chestnut is an excellent substitute.



DESIGN FOR CARVED OVERDOOR WITH CORNICE

XXVII.—WOODCARVING TOOLS

THE TOOLS used by woodcarvers are very numerous, and vary considerably in size and shape. There is no complete set or outfit, as the combination of size and curve allows a variety of form which is almost infinite. For a professional carver an assortment of from eighty to one hundred tools is not uncommon, but a good deal of work, especially in some styles, can be accomplished with a tenth part of that number, and the beginner—for whom this book is written—would be more hindered than helped by a full outfit. The following list, though not including all the varieties obtainable, will give the reader a fair idea of the names and forms of the tools :—

V TOOLS.—Fig. 199 shows three types of V or parting tools.

CHISELS.—The carver's chisel, commonly called a firmer, and the corner firmer or skew chisel are illustrated in Fig. 200. These and most other forms of carving tools are made in widths varying from 1-16th in. to 1½ in. The marks at the left-hand side of the illustrations show the shape of the cutting edges on an enlarged scale.

GOUGES.—Fig. 201 shows three shapes of straight gouges, the lower one of the three being termed a 'flutting' tool, and in the smaller sizes (⅛ in. or under) a 'veiner.'

BENT GOUGES.—At Fig. 202 are shown 'curved' gouges, and all the shapes obtainable in straight gouges are obtainable in the curved form, as also in the other forms illustrated. Fig. 203 shows 'bent' or 'front bent' gouges, while Fig. 204 illustrates the 'back bent' variety.

DESIGN FOR MIRROR FRAME

BENT CHISELS.—Fig. 205 shows three bent chisels, commonly known as 'grounding tool' or 'grounders.'

A glance at the illustrations will show that the tools have a cutting edge at one end and a point at the other. This latter is called the tang—and is for holding the tool in the handle, into which it is inserted as far as the shoulder, which also can be seen in the illustrations. Some tools for light work are made without shoulders.

THE HANDLES are from $3\frac{1}{2}$ ins. to 5 ins. in length and from $\frac{5}{8}$ in. to $1\frac{1}{2}$ in. in diameter, according to the size of the tool, and are cylindrical, hexagonal, or octagonal in section, sometimes tapering at one or both ends. The best form is the hexagonal or octagonal, as they are not so liable to roll all over the place as the round ones, which have an uncomfortable knack of falling off the bench and thereby damaging their edges. The handles are usually fixed by driving them on to the tang of the tool after first boring a hole in them, but some carvers prefer to set them in gutta-percha.

The tools, except those sold in sets, are usually supplied (unless otherwise ordered) without handles and not sharpened, but can always be obtained handled and sharpened ready for use. Some good sets, containing from six to twenty or thirty tools, can be obtained, but it is better to buy tools singly as required. The shapes vary somewhat with different makes, and the maker's list should be obtained before purchasing.

When the carver is sufficiently advanced, and feels that he or she has gained the necessary degree of proficiency, then it is advisable to add to the set whatever tools are necessary to properly execute the work in hand; and when intricate designs are being attempted, it will be found that more 'grounding' tools are necessary than the two indicated at Fig. 24, a smaller

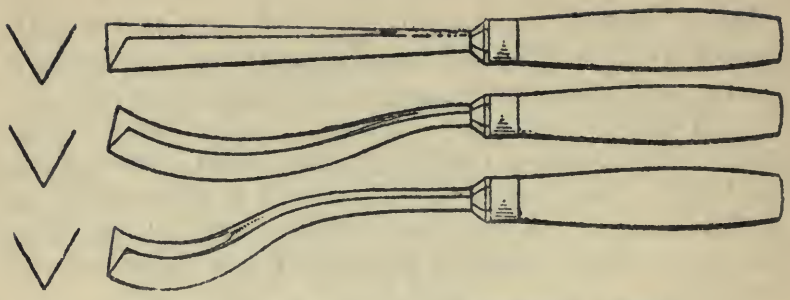


FIG. 199.—TYPES OF V (OR PARTING TOOLS)

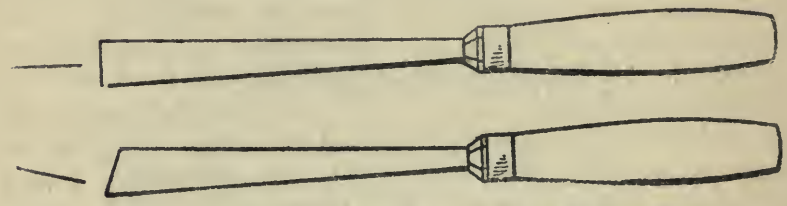


FIG. 200.—CHISELS, OR FIRMERS

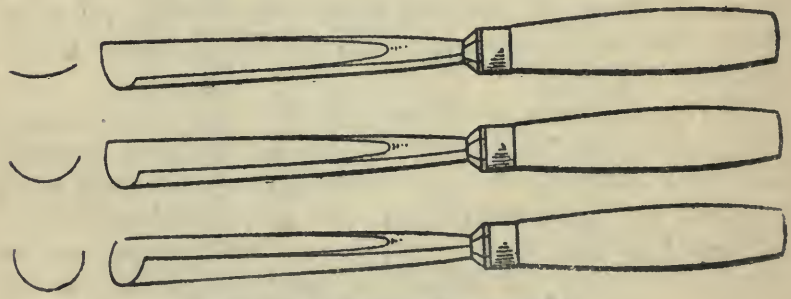


FIG. 201.—STRAIGHT GOUGES

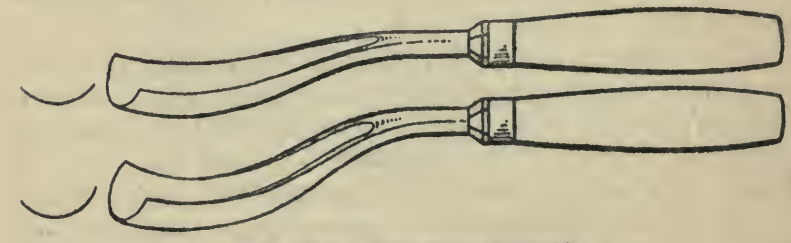


FIG. 202.—CURVED GOUGES

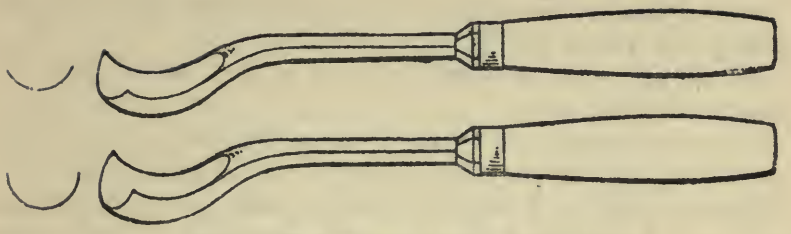


FIG. 203.—FRONT BENT GOUGES

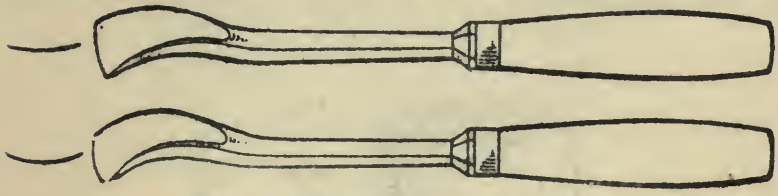


FIG. 204.—BACK BENT GOUGES

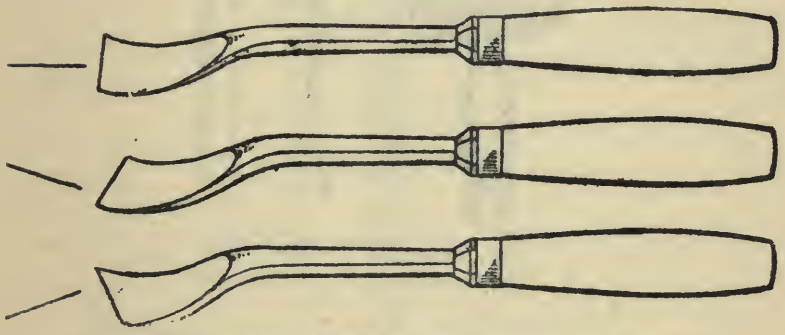


FIG. 205.—BENT CHISELS, OR GROUNDING TOOLS

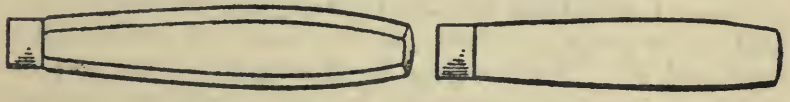


FIG. 206.—CARVING TOOL HANDLES

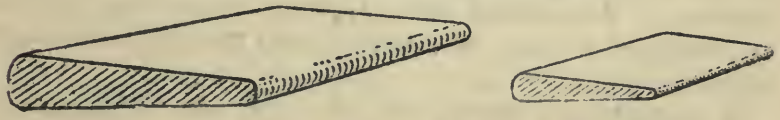


FIG. 207.—SECTIONS OF OIL SLIPS

one, 1-16th in. No. 21, and one size larger, ¼ in. No. 21, being the most useful.

Materials for sharpening tools are mentioned in the next chapter.

Other tools.—In addition, a mallet, one or two punches, and a pair of cramps will be required. The mallet should be a round carver's mallet, the advantage of these being that they always present a similar face to the tool handle. Punches can be obtained, ready

FIG. 208
MALLET

FIG. 209
PUNCHES

made, at the tool dealers; but may be made from large wire nails or other suitable material with a three-cornered file. With regard to the cramps, those shown in Fig. 4 are recommended because they are flat and do not interfere with the free work of the hands whilst carving. We would also impress upon workers the necessity of a case, or suitable box, to keep the tools from injury.

A substantial bench or table will be required for working at, and should be of sufficient height to enable

the carver to work standing. Fasten the work down at the corner of the bench, when practicable ; you can then get round the work much better, and so are able to execute the curves in the designs with greater precision.

There are various ways of fixing the work to the

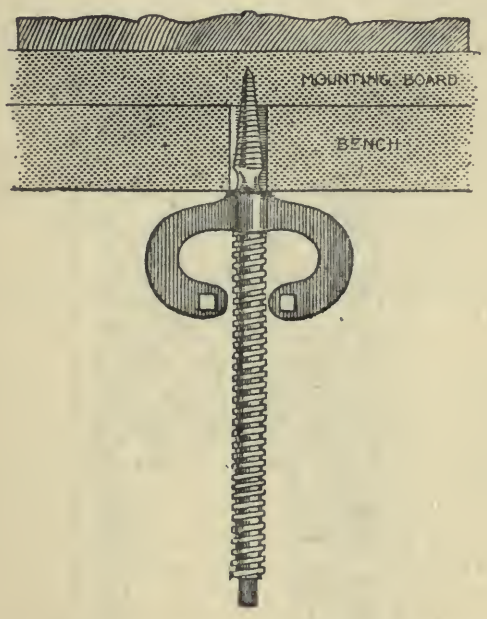


FIG. 210.—WOODCARVER'S BENCH SCREW

bench. For instance, a panel can be held by three or four ordinary iron door buttons screwed to the bench, or pieces of wood can be made to answer the same purpose. The best method is to have a stout piece of wood on which to mount the work, either by glueing with paper in between or by screwing and fixing the former to the bench with the bench screw. The screw

is passed through a hole in the bench and secured with the nut underneath, as Fig. 210. This arrangement enables the work to be turned round as desired to cope with the variations of the grain and its value cannot be over-estimated. Most of the exercises in the present volume can, however, be held while working with a pair of ordinary iron cramps.

PHOTOGRAPH FRAME, WITH IVY LEAF DESIGN

XXVIII.—SHARPENING TOOLS

THE best work—clean and sharp in outline, and crisp in surface treatment—can only be produced by the proper combination of ability with sharp tools. Tools as they come from the makers are, as a rule, not ground, so the edges must first be ground straight across, when they will be found to be very thick; they must then be ground down now to a fine edge, quite evenly, so that neither the corners nor the centre dip. Each tool, it will be noticed, has a face side—that is, the one which is polished, the back generally being left dull; and, in grinding, both sides where practicable may be laid on the grindstone. More steel is ground off the back than the face of the tool.

Grinding.—Grind a portion of the steel off each side of the tool until the edge is *barely visible;* let this edge be very thin indeed, but do not let the two ground surfaces quite meet. The length of the ground surface should be about $\frac{3}{8}$ in. on the back and considerably less on the face, it often being sufficient to rub the face side on the oilstone. If too long a bevel be made, the strength of the tool is reduced.

In grinding straight tools no great difficulty is found, but curved tools require more careful treatment. The best way is to gently rock them from side to side until the edge reaches the degree of thinness required. Always turn the grindstone away from the tool—not towards it—and use plenty of water. After grinding, the flat tools should be held upon the stone at an angle just a little greater than that of the ground surface and rubbed backwards and forwards until the two surfaces meet each other, taking especial care

to preserve the same angle the whole of the way. This will bring the tool to a cutting edge.

When putting in bevels on the grindstone the stone should be turned away from the tool, and the last or cutting bevel should be worked on the oil stone only, the feather edge (or burr) being taken off by means of the leather strop dressed with a little oil and fine emery powder mixed together.

Sharpening.—The gouges, of course, can have their outside or back surface worked on the stone. There are two methods of doing this ; one is to hold the tool at right angles to the stone, and gently rock it from corner to corner the full length of the stone ; the second is to hold it like the flat tools and rock it rapidly from corner to corner, as it is at the same time pushed backwards and forwards. Care must be taken to wear the edge evenly, so that it is still straight across when this process has been gone through. For the inside of the gouge, take the slip whose curved edge most nearly fits its curve, and, holding it at an angle, rub it backwards and forwards, taking care to rub equally on the corners as on the centre. With the V-tool care must be taken to keep the point sharp and clean. A few detail hints on the sharpening of gouges and V-tools may be of service.

SHARPENING GOUGES.—Gouges require more practice to sharpen properly than in the case of chisels. The best way is to hold them at right angles to the oil stone, and to put them through a double motion ; thus, as the tool is worked from right to left and back again along the surface of the stone, the wrists should be moved, rocking the gouges according to their curves so that all the surface of the curve gets an equal pressure and treatment. The bevels of gouges should not be too great, as they are then rendered very thin and brittle. Inside edges are treated with the washita slip, one being chosen that is as near to

DESIGN FOR PICTURE FRAME

the curve as possible, but not greater. With many mechanics who have taken up wood carving, there is a bad habit of so sharpening their gouges that the centre projects in a point. This habit causes the cuts to be uneven. If it is thought necessary to round the corners off at all, treat slightly. Of course rectangular corners are liable to be broken, but to round them too much is to destroy the known value of the curve.

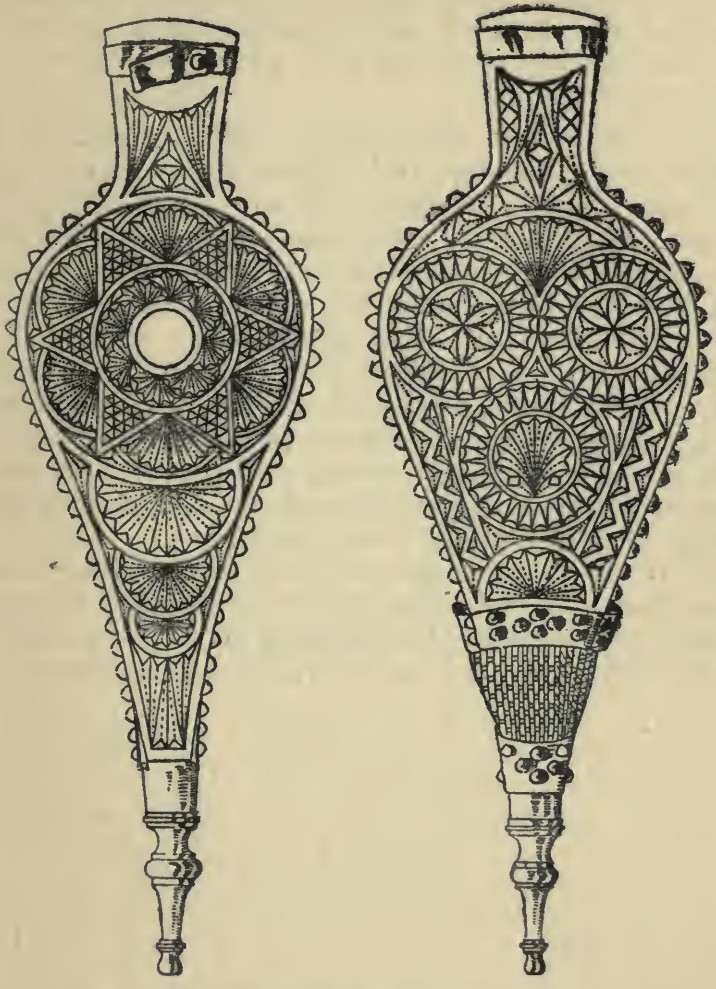
The veiners are sharpened in the same manner as the gouges, but, being so small, special slips to fit should be used for the inside.

SHARPENING V TOOLS.—The parting, or V tools, are the most difficult to sharpen in a satisfactory manner. They are, however, so useful in setting in most work, that their good cutting condition is of first importance. They should be laid over on their side and each surface treated like a chisel. They are, in fact, two chisel planes placed so as to form a cutting angle. The two sides should not give much trouble, but they must be ground equally and even, or else an undesirable lip or hollow will appear. The angle at the bottom is the most important and yet the hardest to get right.

Some parting tools are made rather thick at the point, and it is sometimes necessary to rub them up a little from the bottom. A good tool would not need any of this bottom treatment, but it would have to be carefully sharpened with an Arkansas slip that fits the angle as near as possible.

STROPPING. — Every tool should be finished on the leather, which can be either a proper strop or a piece of old leather.

After working on the oilstone we shall often find that along the edge of each tool there is what is called the feather edge: and the use of the strop is here called in to take this off. Draw the tool rapidly along the strop several times on one side, then on the other.



CHIP-CARVED BELLOWS

Then the edge will be found to have disappeared and the tool is quite ready for use. If properly sharpened the tool will make in the softest wood a cut which leaves a smooth, clean surface, quite free from roughness and scratches.

MATERIALS FOR SHARPENING.—The materials requisite for grinding and sharpening carving tools are a grindstone (or access to one) which should be of medium texture; one quick-cutting (or what is known as a fast carborundum or Washita) oil stone; one fine close grained oil stone for finishing; two or three Washita slips to fit the gouges; and a set of Arkansas slips for veiners and parting tools. (Fig. 207.) If the above is found to be too costly, one medium carborundum oil stone, one Washita slip for gouges, with one large curved surface and one small, and an Arkansas triangular slip for the parting tools would be sufficient for most purposes.

A strop is also required. This is a leather strap into which has been well rubbed a mixture of tallow and emery powder. Its object is to take off the fine feather edge often left on tools after leaving the slip.

XXIX.—DESIGNS

TO BECOME an expert woodcarver is essentially a question of time and study. The worker must have good models of a progressive character from which to study, or no progress can be made. To go on repeating the same elementary forms in infinite variety will give facility in handling the tools; but, just as a child who never heard speech would remain dumb, so the carver who does not study the works of others will never be able to express freely his own ideas, and according to the quality of his impressions his expression will be good or otherwise. The ability to draw from nature or models is undoubtedly of great assistance to the carver, as carving is but a development of drawing—drawing in many planes instead of in one as on paper; but many who cannot make a passable drawing on paper can yet execute relief work when the design is mechanically set out.

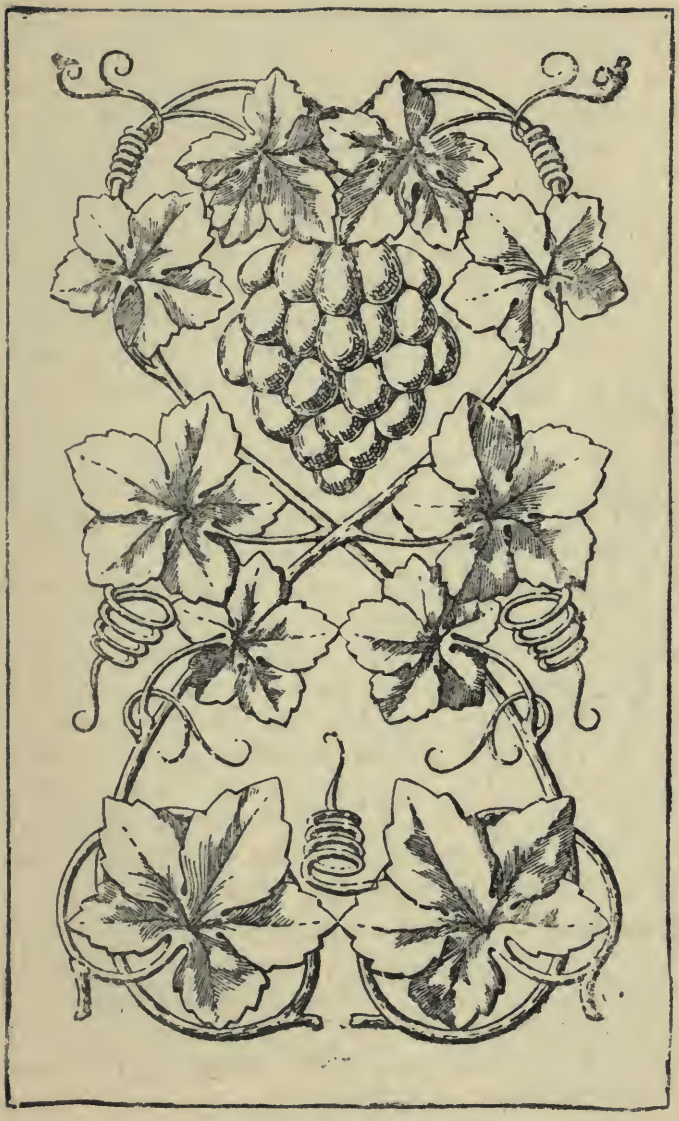
Drawing.—The woodcarver is strongly urged to practise drawing and to make preliminary drawings before attempting any piece of carving, as this enables a clear idea of the design to be obtained and conduces to a better execution. In the case of a poor draughtsman it is better, after making one's own studies, to start the actual work with a good outline drawn by another hand. The design can, of course, be pasted on to the wood, as is frequently done by fretworkers; but this proceeding is by no means to be recommended to carvers, as the paper obscures the grain of the wood, rendering it a matter of experiment as to which way a particular cut should be made, whereas with the pattern clearly traced the proper direction can be be seen at a glance.

Those who are unable to draw freehand, and are aware of the deficiency, may to some extent overcome the difficulty by learning to draw mechanically —measure each point on a design with the compasses and copy it bit by bit, never trusting to the eye, but measuring from margin to leaf and leaf to stalk throughout all the pattern. It may be a long process, but it will result in accuracy, and finally, if the method be persevered in, the student will suddenly find that he has acquired a ' free ' hand, and no small capacity for designing. Orthodox art teachers may not agree with the foregoing instructions, but they are culled from the experience of one who trained many expert carvers and who insisted that an accurate knowledge of form was the basis of all good design.

SELECTING DESIGNS.—All woodcarvers should adopt the practice of keeping cuttings of illustrations of woodcarving taken from magazines and the daily papers, both from the advertisement columns and from the special articles which appear from time to time in such journals. It is surprising what a valuable collection can be got together in this way. The cuttings should be selected from good examples, and carefully labelled as to their style and period. From this rich storehouse of ideas and designs it is possible to make a judicious selection as occasion may arise.

Carving, as a general rule, should have no independent existence, but should from the first be taken in hand with a definite idea as to its ultimate use and position. To carve a lot of separate panels, etc., for the sake of carving only, is a lesson only half learned. A practical knowledge of construction should come first wherever possible. We must learn to realise that constructional woodwork and cabinet making go hand in hand with carving, and that this is the only sensible way of progression.

Care taken at an early stage to select a really prac-



VINE LEAF DESIGN

tical and good design suitable to the article in hand would save much disappointment later. Unfortunately, these principles are often disregarded, and we see a design which, though suitable and correct for something else, turns out a failure, just because sufficient thought has not been given to its selection in the first place. It is unwise to take a design which has merely appealed to our fancy, and to use this indiscriminately on any article and in any position. Our cuttings or sketches should help us here, for seeing what has been done in successful work we note it down, endeavouring to find the reason for success, and thus gaining an insight into the proper application of ornamental form to woodcarving.

As carving is applied to furniture, etc., to enrich the same, it stands to reason that the designs should well fill the space or spaces chosen for carving. It is better to reduce the area to be carved than to spread one's work all over the surface. The thin spread-out carved work, with a great expanse of plain or stamped background, has brought a good deal of trade work into ill repute with the more educated section of the public. Therefore, in selecting designs from illustrations or cuttings, choose something that is not only otherwise suitable, but which fills the spaces to be carved, and leaves little background showing. All the necessary plain space can be obtained in the stiles, rails, and borders round the works.

Transferring Designs.—Before actually commencing to carve, it is necessary that some guiding lines should be placed on the wood. These lines can either be drawn direct or, transferred from a design previously drawn on paper, which is usually the better course, and there are several ways of doing this.

The simplest, cleanest, and most expeditious method of transferring designs from paper to wood is by means of carbon paper, which can be purchased from any

DESIGN FOR HAND MIRROR

stationer. This, as most know, is simply a sheet of paper coated with a preparation of grease and colour, so that when any hard substance is drawn across it a mark is left on whatever happens to be underneath. These tracing papers may be had in black, blue or red. Black is usually preferred—chiefly on account of its leaving a stronger mark on the wood.

A new sheet of carbon paper is obviously blacker and more greasy than one which has been in use for some time. It consequently gives a stronger impression. For this reason it is advisable to use a new sheet for dark woods, such as American walnut, and a worn sheet for white or delicately-coloured woods. On a dark wood a worn sheet will leave an indistinct line which it is difficult to follow; whilst if a new sheet is used for, say, sycamore, it may soil the surface to a degree that will afterwards necessitate laborious cleaning.

FIXING THE PAPER.—When the design is arranged on the wood it must be seen that the carbon paper is below every part of the diagram that has to be traced. It is idle to suppose that the worker can *hold* the design on the wood while he traces the outline; he must fasten it down at the corners with pins, tacks, or—better still—regular drawing-pins. If the design should happen to slip when the work is half done it will puzzle the operator to know how to get it exactly in its right place again. During the preliminary preparations care must be taken not to rub the hand roughly over the design, as this will leave a mark on the wood; such care is particularly necessary when the carbon paper is new and greasy.

WHAT TO TRACE WITH.—It is usually said that tracing may be done with an agate stylo, a sharp-pointed stick, or a pencil. Tastes always differ, but the writer prefers a pencil. An agate stylo has rarely a sharp enough point. If a 'stick' is used, a hard-

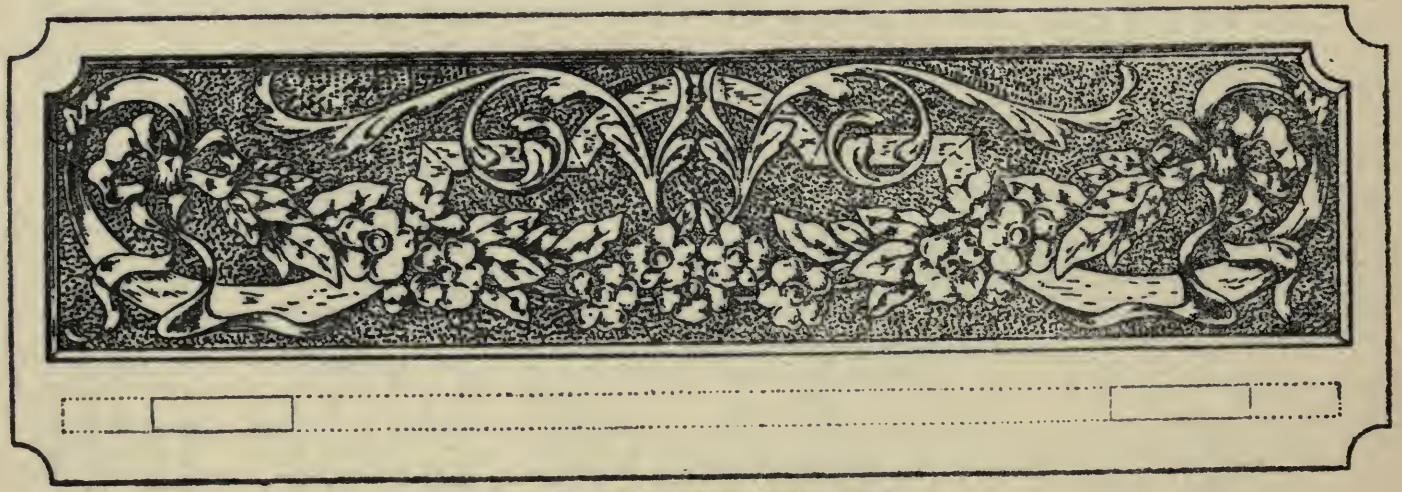
wood penholder sharpened to a fine point is the best weapon ; any soft wood is useless. The advantage of a pencil is that we all know how to hold and use it. The lead should be hard (say an H or HH) and must be kept with a sharp point. If the worker keeps a small bit of fine glasspaper beside him and periodically rubs the lead point on it he will be able to reproduce a consistently fine outline on the wood.

In tracing the design there can be no doubt that the worker who has had no experience in drawing is at a disadvantage. Still, as it is only a matter of going over an existing line with a steady hand, a little practice should give him the required skill.

When the ornamental part of the work is taken in hand it will be found that the glossy mark left by the pencil on the diagram indicates clearly how much of the drawing has been done, and obviates the necessity for continually raising the paper to see how the work is progressing. The skilled draughtsman has many opportunities for correcting any little errors in printing which may have crept into the design. On the other hand, the unskilled encounters endless pitfalls into which he will stumble if he attempts to hurry over his work.

A firm pressure of the pencil is necessary to give a good outline, but any actual indenting of the wood should be avoided. When the work is supposed to be completed, the paper should be gently raised to see that no part has been omitted. In doing this it is wise to keep the two top pins in, so that if any lines have been left out the design may not be displaced.

Duplicating.—An incidental advantage of tracing in this way is that, as the carbon paper is coated on both sides, an impression is left on the back of the design as well as on the wood. In this way, if a reversed diagram is ever wanted, the design may be laid face

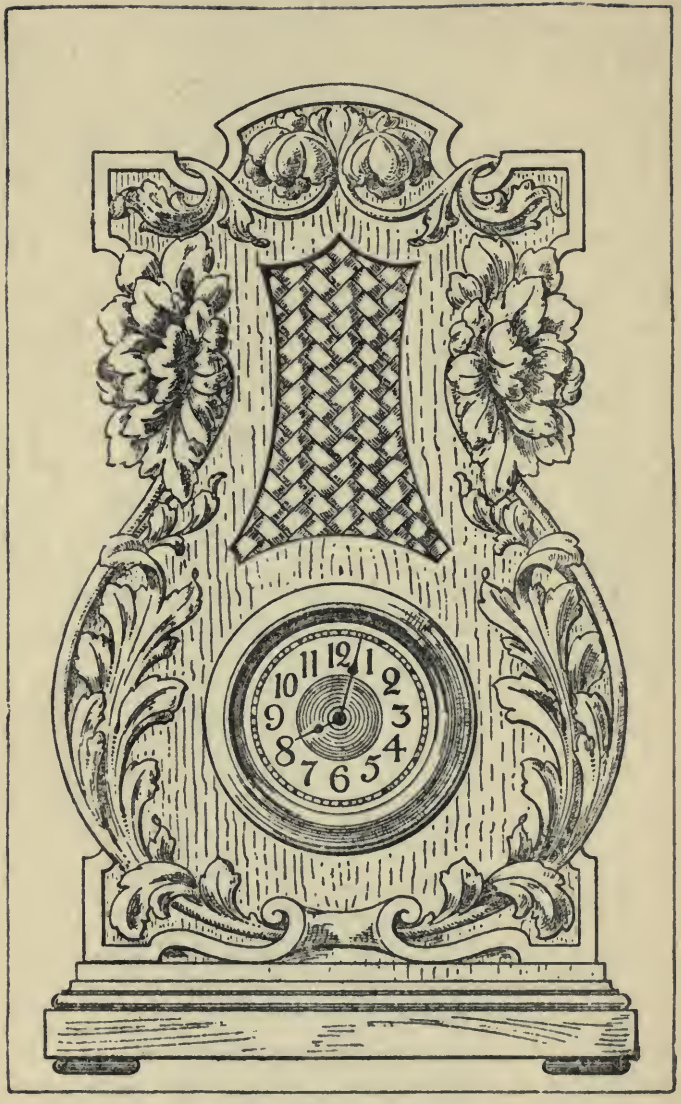


DESIGN FOR CARVED PIPE RACK

downwards on the wood and the tracing done from the outline on the back.

Carbon paper is also useful for completing a design or shape when only one half is given. A sheet of white paper is folded in two, and the carbon paper placed inside, close up to the fold. The design is then arranged above, the centre line exactly corresponding with the fold. When the outline is traced, and the white paper is folded out, an impression of the whole pattern will be found.

In the absence of carbon paper the back of the design may be rubbed over with chalk or charcoal, according to the colour of the wood to be used, or a lump of burnt sienna or Venetian red or any dry substance which will leave a deposit on the paper can be used. The pattern is pinned to the wood and marked over as before described, but as the dry pigments will rub off the wood as easily as from the paper, the lines must be gone over again on the wood with a pencil. This second marking is not required in the case of good carbon paper, as the greasy matter on the latter adheres to the wood.



DESIGN FOR TIMEPIECE

XXX.—WOODS FOR CARVING

THE wood chosen for carving should always where possible, be of even and uniform grain, free from knots and strong markings. For beginners a soft wood is advisable, as not only does it require less physical force from hands unaccustomed to the work, but the exercises can be got through more speedily. The freedom with which soft wood can be worked also assists the student to obtain a good style of working, and its liability to damage demands a care and watchfulness throughout, both of the condition of the tools and the method of working, which are of inestimable value.

The best yellow pine is a splendid wood in this respect and is comparatively cheap. Satin walnut is, however, a favourite wood for early exercises, as it is somewhat firmer than pine and has a better appearance when finished. It is more liable to twist and warp than most other woods, and is somewhat unsatisfactory for work that is to be made up. Selected straight grained mahogany is harder still, but is excellent for the purpose, especially for those who have had some previous experience in working in wood. Oak and walnut and other hard woods are better left alone until the student has made some progress.

The exercises treated in this book have been arranged so that the tools will be brought into use gradually; and the difficulties which invariably occur to the beginner have been dealt with one by one, so that they may be more easily mastered.

Polishing Carved Work.—When the worker has finished his carving the question of polishing it arises. There are quite a number of methods within the ability of anyone who is not an expert polisher.

If American walnut has been used, it looks well if the plain parts, such as framing, mouldings, and margins, are french polished, and the carved portions left quite dull; either covered with just one coat of polish, put on with the brush, or left the natural colour of the wood, it being understood that carving should not as a rule be highly polished.

OILING the whole work with raw linseed oil makes a very good finish, and, if followed with vigorous rubbing at regular intervals, a good dull polished surface can be obtained that is pleasing, natural, in good taste, and that shows the grain of the wood to great advantage. The process simply consists in covering the work, either with a rag, or a camel-hair brush, with raw linseed oil, letting it stand for two or three hours, and then wiping off with a clean rag. This process repeated, say, half-a-dozen times, and followed by the vigorous rubbing referred to, will produce an exceedingly good surface. If it be required of the oil that it shall dry quickly, it is an advantage to put one part turps to two or three parts oil.

Another way to finish walnut is to oil, dry, and rub, and then give one coat of brush polish; glasspaper with fine paper; then rub with the familiar beeswax and turpentine or ronuk.

Finishing Oak.—The same plan can be adopted if the wood be oak, especially if it be required to have it light in colour. If it be required to have it very light, it may be waxed without previously oiling it, which latter slightly darkens it. But many people like the oak to be darkened to a greater or less extent. The best way to accomplish this is to fumigate it by means of liquid ammonia. Different kinds of oak take the fumes in a different manner. Red oak, for instance, will scarcely take the fumes at all. Wainscot oak from the Baltic ports, or from Odessa, will take the fuming the most evenly.

After the desired shade is obtained, the work may be oiled with raw linseed oil and then waxed, or it may be waxed without oiling. The latter process slightly darkens the wood, so this should be borne in mind in deciding whether the colour produced by the ammonia fumes is quite the right shade required.

Oak may also be stained to any shade required. Stephens' stains are suitable for this purpose, only requiring diluting with water if too strong. After the stain is applied, it should be allowed to dry. Then the work may be oiled and waxed as before.

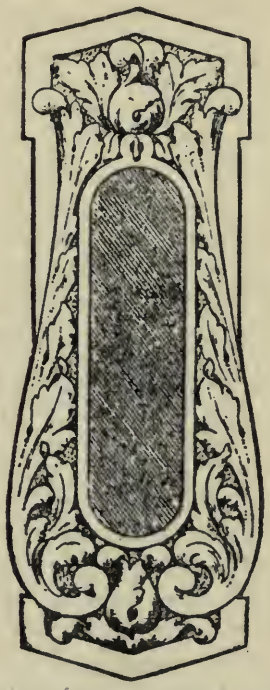
Other Woods.—Satin walnut, if waxed only, retains its natural colour. It may also be oiled and then waxed, giving it a yellowish brown tint, slightly darker than its natural colour. It may be also coated with white polish; the application of two coats is sufficient to keep it clean, and at the same time gives only a dull finish. It may also be french polished, keeping well in mind advice already tendered that the carved work itself should not be bright. Satin walnut can also be stained to imitate oak or American walnut, and then oiled and waxed, or french polished.

These remarks on the finishing of satin walnut can also be applied to kauri pine and canary wood. White woods, such as sycamore, chestnut, and holly, may be stained according to the taste of the student—green, black, brown, etc., then given two coats of polish.

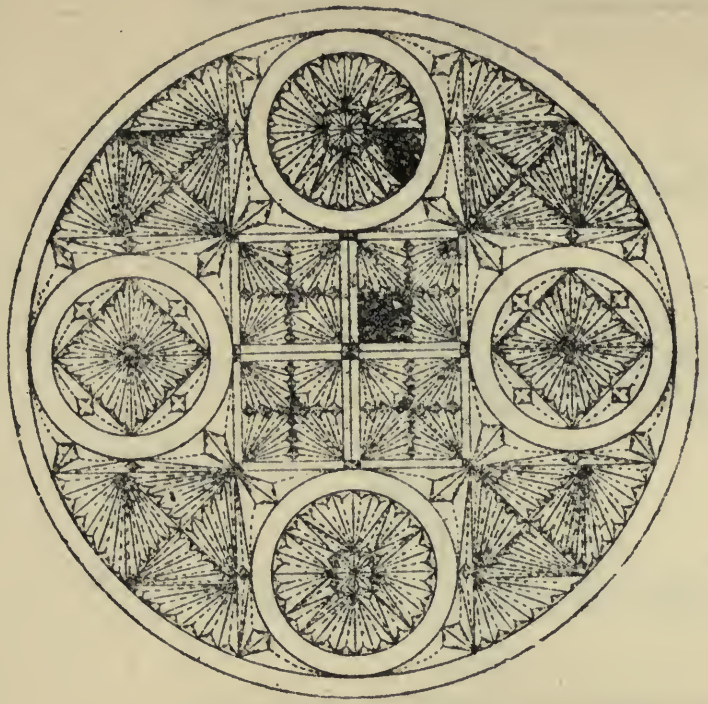
An excellent polish for carved work is made by first dissolving shredded beeswax in spirits of turpentine, then mixing the emulsion so made with equal quantities of boiled oil and turpentine.

In the course now brought to a close, it has been intended to take the beginner from the commencement of the art of wood-carving to a point when he or she will be able to grapple with the greater difficulties of more advanced work unaided, with more or less success. By always taking advantage of oppor-

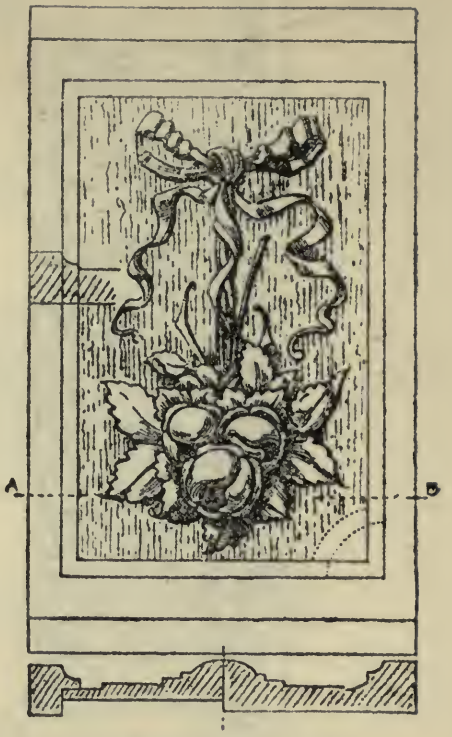
tunities, of inspecting, and, if possible, of taking sketches and particulars of good work, the worker should be able, to some extent, to undertake the execution of fairly difficult pieces of carving. What is most required is practice—constant conscientious practice, having regard not to the quantity of work done, but rather to the quality.



DESIGN FOR THERMOMETER

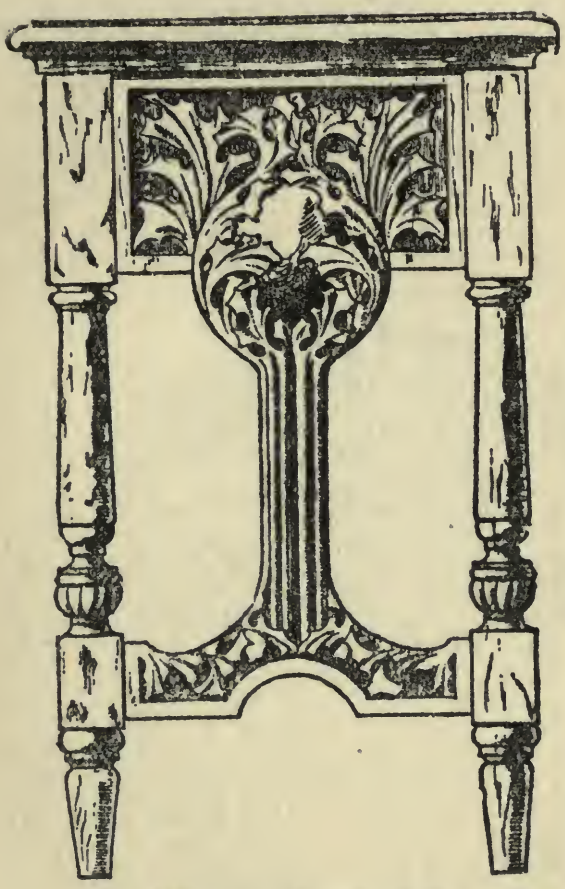


CHIP-CARVED TABLE-TOP

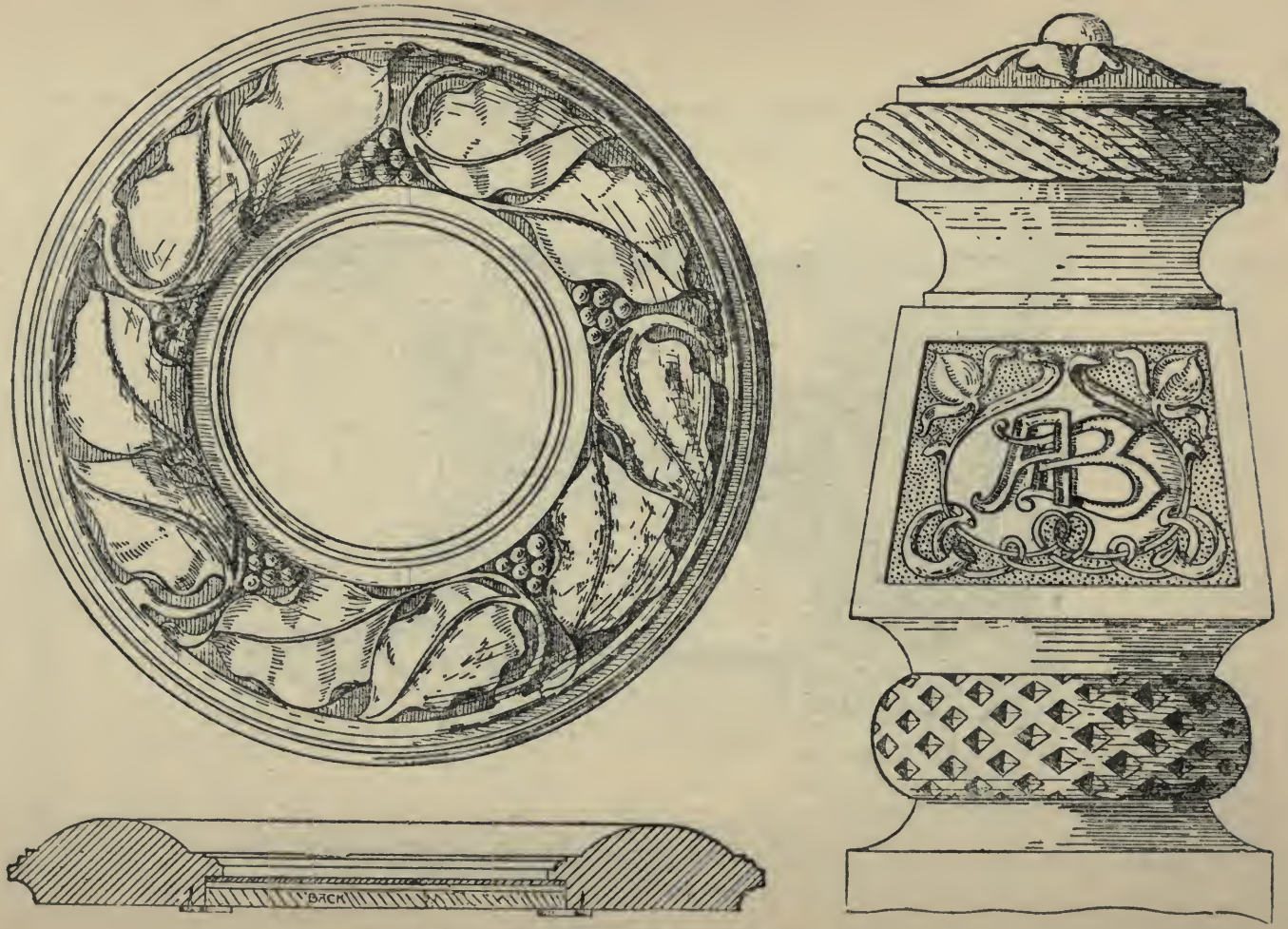


PANEL, WITH SECTION

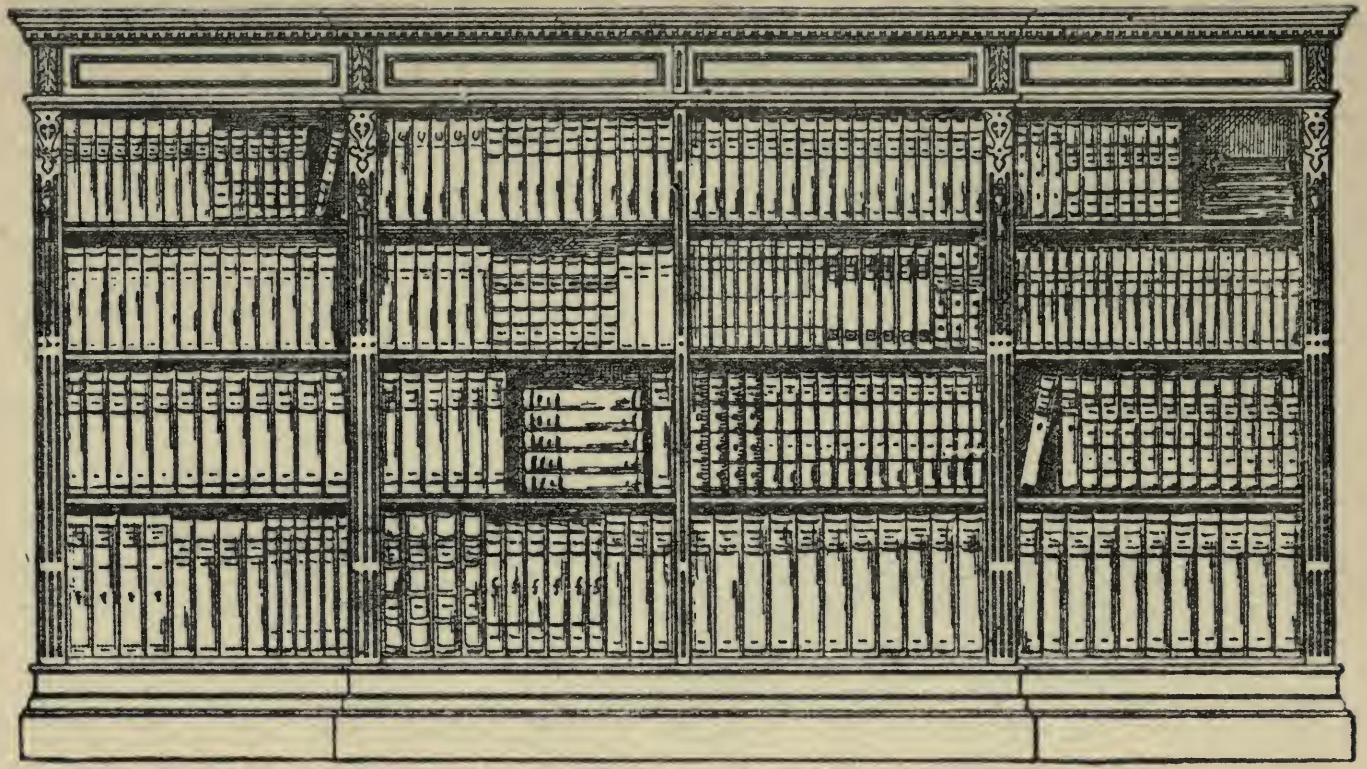
CARVED TABLE—SIDE VIEW



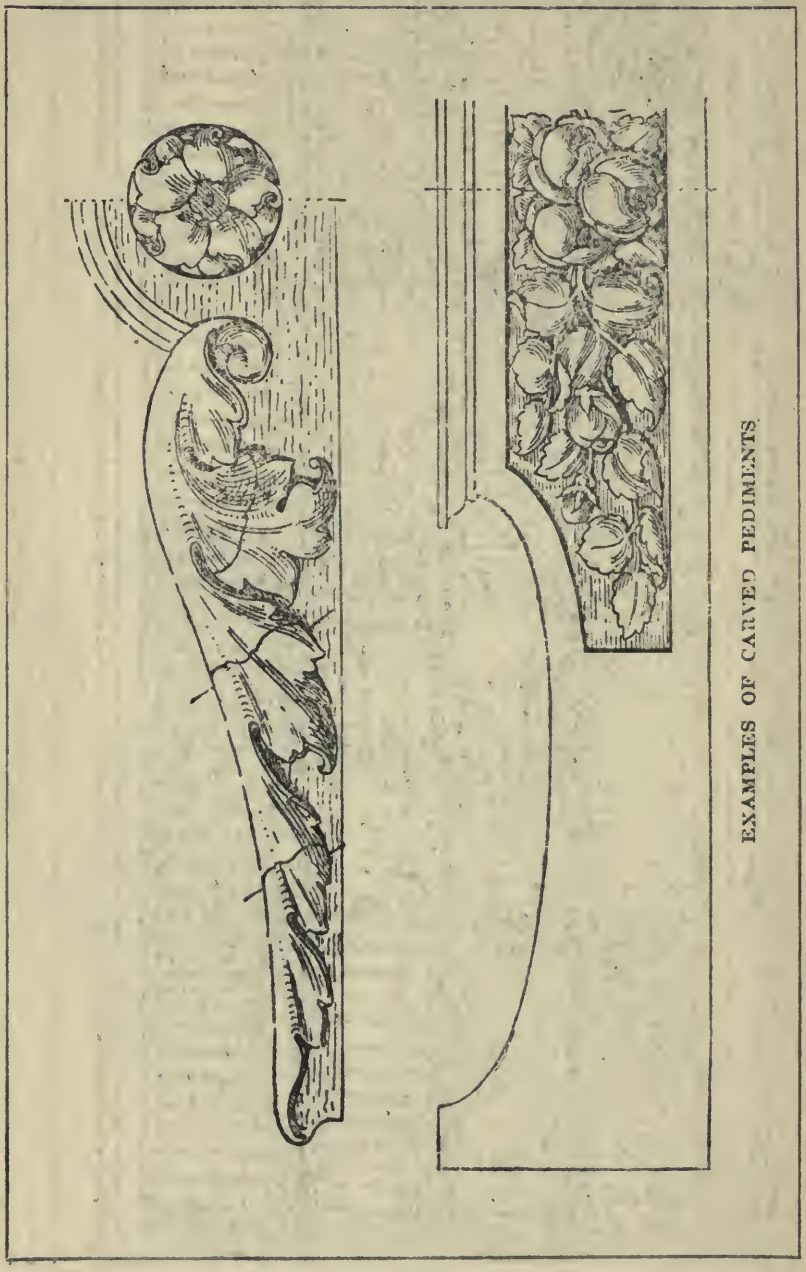
CARVED TABLE—END VIEW



EXAMPLES OF TURNED AND CARVED WORK



DUTCH BOOKCASE, WITH CARVED PILASTERS, ETC.



EXAMPLES OF CARVED PEDIMENTS

INDEX

Acanthus leaf, the, 27
Adam style, catenaries of, 165, 167
Ammonia fuming, 203
Amorino brackets, 120, 122
Angel heads on brackets, 120
Architectural purposes, carving for, 171
Arkansas oil slip, 188, 190
Arms, heraldic, 55

Back bent gouges (*see Gouges*)
Beeswax and turpentine, 202
Bellows, designs for chip-carved, 189
Bench screw, use of the, 27, 127, 129, 183
Bench, the work, 182
Bent chisels (*see Chisels*)
Bent gouges (*see Gouges*)
Birch, 170
Bird and foliage panel, carving a, 101
Birds, treatment of, 101
Bookcase, Dutch, with carved pilasters, 209
Book rack end, design for, 8
Bookshelves, design for, 135
Border adaptation of Gothic trefoil, 21
Borders, Gothic, 10
Brace and bit for pierced work, 83
Bracket, design for, 48
Brackets (or consoles) for door canopy, 171
Brackets with amorino heads, 120, 122

Cabinet door, carving a, 76
Cabriole legs, carving, 88
Canary wood, 203
Canopy, consoles for door, 171
Carbon paper, 10; how to use, 194
Cartouche as central ornament on sofa back, 168
Cartouche ornament, 46
Carving tools (*see Tools*)
Catenaries and festoons, 165
Chest, carving Elizabethan oak, 63
Chestnut, 173, 175, 203
Child's head, formation of, 120
Chip-carved bellows, designs for, 189
Chip-carved clock, design for 153
Chip-carved table top, 205
Chisel, using the, for setting in outline, 3
Chisels, bent (grounding tools), for background work, 24, 179, 181
Chisels, types of, 177, 180, 181
Claws, carving, 92
Clay, blocking out child's head in, 121
Clay model, making a, 113, 121, 152
Clay modelling, practice in, 152
Clock, design for, 200
Clock, design for chip-carved 153
Cock, conventional Gallic, 95
Composition of line, importance of, 136
Consoles for door canopy, 171
Couch, Early Victorian, 158, 160
Cramp, the most useful type of woodcarver's, 2, 5, 180, 182

Cramp used for holding work, 10, 182
Crewe Hall, griffins on staircase of, 130
Cusping on Gothic tracery, 84

Designs, adaptation of, 40
Designs, duplicating, 199
Designs, hints on, 191
Designs, illustrations of :—
Bellows, chip-carved, 189
Bookcase, Dutch, 209
Book rack end, with maple leaf, 8
Bookshelves, 135
Bracket, 48
Cabinet door, 77
Chest, Elizabethan, 63
Chip-carved clock, 153
Clock, 200
Clock, chip-carved, 153
Cupboard, Gothic, 83
Door canopy with carved consoles, 172
Festoons, 166, 168, 169
Figure panels, 137, 143
Flower pot stand, with acanthus leaf, 32, 34
Frame, 141
Frame, mirror, 178
Frame, mirror or picture, 42
Frame, photograph, with ivy leaf, 184
Frame, picture, 187
Frame with Gothic ornament, 9
Gothic cupboard, 83
Gothic frame, 9
Griffin, heraldic, 62
Hand mirror, 195
Heads, female, 148
Heraldic griffin, 62
Heraldic shield, 56, 57
Key rack, 26
Mirror frame, 178
Designs, illustrations of—*contd.*
Mirror, hand, 195
Overdoor, 176
Panel, fish, 108
Panel, hare and squirrel, 115
Panel, pheasant and foliage, 102
Panel, vine leaf, 193
Panel, with section, 205
Panels, figure, 137, 143
Pediment ornament, 72
Pediments, examples of, 210
Photograph frame with ivy leaf, 184
Picture frames, 42, 187
Pipe rack, 198
Sofa, Early Victorian, 158
Table, carved, 16
Table, circular, with cabriole legs, 93, 94
Table, Louis XV, 94
Table, side and end views, 206, 207
Table top, chip-carved, 205
Thermometer, 204
Timepiece, 200
Timepiece, chip-carved, 153
Turned and carved work, 208
Wall pocket, 75
War Roll of Honour, 74
Window box with acanthus leaf, 33
Designs, transferring, 194
Door canopy, consoles for, 171
Door, carving a cabinet, 76
Drapery, 139, 140
Drawing, advantage of, 191
Drawings, carving heads from shaded, 147
Duplicating designs, 199
Dutch bookcase with carved pilasters, 209

Index

ELIZABETHAN OAK CHEST, carving an, 63
Elizabethan period referred to, 124, 126, 130
Empire (French) period, influence of, on Early Victorian furniture, 161
Eye, treatment of, 93

FEATHERS, treatment of, 103
Feet, detail of, 139
Festoons and swags, 165, 168, 169
Figure carving, 136
Firmers (chisels), types of, 177, 180
Fish panel, carving a, 107
Fish, treatment of, 107
Fleur-de-lis feature, 100
Flower pot stand with acanthus leaf, design for, 32, 34
Flower, the water-lily, 113
Fluters (quick gouges), 177, 180
Foliage, treatment of oak, 106
Frame border, carved, 10
Frame, design for, 141
Frame, design for Gothic, 9
Frame, design for mirror, 178
Frame, design for picture, 187
Frame, mirror or picture, design for, 42
Frame, photograph, with ivy leaf, 184
Frames, decoration of, 49
Freehand drawing, 191
Front bent gouges, 177, 180
Fruit as ornament for festoons, 167
Fur, indicating animal, 117
Furniture, application of carving to, 63, 70, 76, 82, 88
Furniture, Early Victorian, 154

GALLIC COCK, conventional, 95
Gauge for testing depths, 87
Gibbon, Grinling, 165
Gothic borders, 10
Gothic forms, usefulness of, 1
Gothic frame, design for, 9
Gothic leaf, illustrations of, 1, 3, 4
Gothic tracery, carving, 82
Gothic trefoil, the, 19
Gouge, grouping main features of leaf with, 5
Gouge, sinking pattern by means of, 4
Gouge, small, used for circular holes or hollows, 67
Gouge used for cuspings, 84
Gouge used for lobes of leaf, 12, 14, 22
Gouges, curved, 177, 180
Gouges, deep, used for hollows, 36
Gouges, flat, for shallow work, 58
Gouges, front and back bent, 177, 180
Gouges, sharpening, 186
Gouges, types of, 177, 180, 181
Gouges used on acanthus leaf, 27, 28, 30, 31
Griffin, carving the, 130
Griffin, heraldic, 62
Grinding tools, 185
Grindstone, using the, 185
Grotesque heads and masks, 125
Grotesques : the griffin, 130
Ground, how to treat, 8
Grounding tools (bent chisels), 24, 179, 181

HAND MIRROR, design for, 195
Handles, 179, 181
Hands, detail of, 139
Hare and squirrel panel, 114
Head, carving conventional animal's, on cabriole leg, 88, 90
Head, child's, 120

Heads, carving, from shaded drawings, 147
Heads, grotesque, 125
Helmet features, heraldic, 58, 60, 61
Heraldic carving, 55
Heraldic griffin, 62
Heraldic shield, design for, 56, 57
Holly, 203

IVY LEAF DESIGN, 184

KAURI PINE, 203
Key rack, design for, 26

LEAF DESIGN, vine, 193
Leaf, illustration of maple, 7
Leaf, illustrations of Gothic, 1, 3, 4
Leaf, ivy, design, 184
Leaf, the acanthus, 27
Leaf, useful type of, for carving, 70, 72
Leek (Welsh) form in design, 79
Legs, carving cabriole, 89
Lettering, 60
Lime, 170
Linseed oil, 202
Lion, conventional, 95
Lobes of leaf, cutting, 5
Lobes, rounding off with gouges, 22
Lobes, setting in with gouge, 12
Lobes, treatment of edges of, 39
Louis XV table, design for, 94

MACARONI TOOL, 24, 25
Mahogany, 160, 201
Mallet, occasional use of, 22, 182
Mantling, carving heraldic, 58, 59
Maple leaf, illustration of, 7
Masks, grotesque, 125
Military panel, 142
Mirror, design for hand, 195
Mirror frames, decoration of, 49
Mirror frames, designs for, 42, 178
Modelling, practice in clay, 113, 121, 152
Moresque influence on Elizabethan work, 65
Mouldings, carved ornament in relation to contour of, 16

NATURAL FORMS in carving :—
  Fish panel, 107
  Hare and squirrel panel, 114
  Pheasant and foliage panel, 101
Newel post, griffin on, 131

OAK, 2, 26, 27, 63, 82, 129, 171, 175, 201, 202
Oak chest, carving on Elizabethan, 63
Oak foliage, treatment of, 106
Oak, fuming, 202
Oak, polishing, 202
Oiling carved work, 202
Oilslips, sections of, 181
Oilstones and oilslips, using, 186, 190
Overdoor, design for, 176
Overmantel, part of Early Victorian, 156, 157

PANEL, a military, 142
Panel, carving a door, 76
Panel, carving a fish, 107
Panel, design for, with section, 205
Panel, hare and quirrel, 114

Panel, pheasant and foliage, carving a, 101
Panel, vine leaf, 193
Panels, figure, 136, 142
Parting (or V) tools, types of, 177, 180
Peartree, 170
Pediment adaptation of Gothic trefoil, 21
Pediment, carving a, 70
Pediment, leaf treatment on a, 41
Pediments, examples of carved, 210
Pheasant and foliage panel, carving a, 101
Photograph frame with ivy leaf, 184
Picture and mirror frames, decoration of, 49
Picture frame design, 187
Pilasters, carved, on Dutch bookcase, 209
Pine, 2, 10, 26, 27, 201, 203
Pipe rack, design for, 198
Polishing carved work, 201
Punch, when to avoid use of, 8
Punches, 182

Red Cross feature, 100
Renaissance period, references to, 47, 55, 124, 130, 165
Ronuk, 202
Rose (English) form in design, 78, 80
Roses as ornament for festoons, 167
Routers for background work, 66, 69

Satin walnut, 80, 201, 203
Satin walnut, finishing, 203
Scales, fish, 109
Screw, use of bench, 127, 129, 183
Section, importance of, in relation to carving, 113
Section of figure, 138
Section of head, 151
Sections, reading, 22, 30, 31, 37, 91, 100, 113, 138, 151
Setting in with chisel, 3
Shamrock form in design, 78
Sharpening tools, 185
Shield, design for heraldic, 56, 57
Shield form on panel design, 80
Skull, study of the, 125
Sofa, carving on Early Victorian, 158, 160
Spandrel, a useful space for carving, 95
Spandrel treatment of British lion, 98, 99
Spandrel treatment of Gallic cock, 98, 99
Squirrel and hare panel, 114
Strapwork, Elizabethan, *see* 63, 68
Stropping, 188
Swags and festoons, 165, 168, 169
Sycamore, 170, 203

Table, carved, side and end views, 206, 207
Table, design for carved, 18
Table, design for Louis XV, 94
Table top, chip-carved, 205
Thermometer, design for, 204
Thistle (Scottish) form in design, 79, 81
Timepiece, design for, 200
Timepiece, design for chip-carved, 153
Tool handles, 179, 181
Tools, carving :—
    Chisels, bent (or grounding tools), 179, 181

Tools, carving (*continued*):—
Chisels (or firmers), 177, 180, 181
Fluters (sharp gouges), 177, 180
Gouges, curved (front and back bent), 177, 180, 181
Gouges, straight, 177, 180
Macaroni tool, 24, 25
V tools (or parting tools), 177, 180
Veiners, 177
Tools, carving (*see also under Chisels, Gouges, V Tools, and Veiners*)
Tools, grinding, 185
Tools, how to hold, 12
Tools, set of seven, 12
Tools, set of six, 6
Tools, set of ten, 25
Tools, sharpening, 185
Tracery, carving Gothic, 82
Tracing designs, 196
Transferring designs, 194
Trefoil, the Gothic, 19
Tudor period referred to, 124, 126
Tudor rose form in design, 78, 80
Turned and carved work, examples of, 208
Turpentine (turps), 202

V Tool, general usefulness of, 14
V tool used for cutting channels of leaves, 70
V tool used for outlining, 12, 20
V tool used for setting in, 89
V tool used for veining leaf, 7
V tools, sharpening, 188
V tools, types of, 177, 180
Veiner, setting out with, 35
Veiner used for circular holes or hollows, 67
Veiner, using the, 16
Veiners, sharpening, 188
Victorian furniture, carving on Early, 154
Vine leaf design, 193

Wall pocket, design for, 75
Walnut, 2, 26, 27, 80, 129, 160, 201, 202
Walnut, polishing, 202
Washita slip, 190
Water-lily flower, 113
Waxing, 202
Window box with acanthus leaf, design for, 33
Wings, angel and amorino, 121
Wings of griffin, 132
Woods for carving:—
Birch, 170
Canary, 203
Chestnut, 173, 175, 203
Holly, 203
Kauri pine, 203
Lime, 170
Mahogany, 160, 201
Oak, 2, 26, 27, 63, 82, 129, 171, 175, 201, 202
Peartree, 170
Pine, 2, 10, 26, 27, 201, 203
Satin walnut, 80, 201, 203
Sycamore, 170, 203
Walnut, 2, 26, 27, 80, 129, 160, 201, 202
Woods for carving, notes on, 201
Wrist play, 12, 71

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